



## **Pyorrhea-Alveolaris or Riggs Disease.**

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Diseases are sometimes inappropriately named. Pyorrhea Alveolaris or Riggs Disease, so called, is a case in point. Gingivitis would for several reasons be more appropriate. It is much more expressive of the disease, which is always first perceptible in the gum tissue. It is not a recent or new disease, but ancient; possibly it prevailed far back in distant ages, antedating civilization. For many generations it was known as scurvy, as was diseased gums caused by excessive deposits of ordinary calcarious formations, emanating from the secretions of sub-lingual and maxillary glands, Hypertrophy of gums, and inflamed, suppurating gums, the effect of sundry causes.

The disease in its incipency is always confined to the margin of the gums, there and nowhere else, and when first noticeable by patient or dentist, it is simply a perceptibly abnormal state of gum tissue close around the necks of the teeth, and at that stage of the disease there is no pus discharge to justify the name pyorrhea alveolaris. As the disease was recognized in all its features, and was treated as successfully as at present, long before Dr. Riggs ever described his treatment of the disease, Riggs Disease is not an appropriate name.

In its earliest incipency the disease is easy of diagnosis, for it is as definitely a well defined disease and is as unvarying in diagnostic features as when advanced to the stage of pus discharge, waste of process and loosening of teeth. It is frequently of long duration before there is any pus discharge and there is always pus before there is any perceptible effect upon the alveolar process, consequently the name pyorrhea alveolaris is inappropriate and misleading. It makes a false impression as to the true character of the disease, especially in its earliest stages, and causes many dentists to think the alveolar process has much to do with the disease, when in fact it has nothing whatever to do with it except to break down and waste away under its destructive influence.

The alveolar process suffers injury and loss by the disease, but is not the seat of the disease, as the name pyorrhea alveolaris would indicate. The removal of deposits, or extraction of teeth will invariably check the ravages of the disease; a proof that the alveolar process has no part in the disease, but wastes away as an effect, as does the peridental membrane. As evidence that the membrane succumbs to the ravages of the disease as does the process, consider results. There is no pain caused by pressure upon the teeth, as when there is well defined peridental inflammation from other causes, and like the process, when destroyed by the disease it cannot be restored. Restoration of either process or membrane, when destroyed by the disease, is an impossibility.

**Constitutional  
versus Local  
Treatment**

To treat constitutionally is a waste of time and injurious rather than beneficial. From earliest perception to extremest typical stages of the disease, there is no need of constitutional treatment. I so state from the fact that I have never known a single case thus treated to be cured. There is seldom a failure to cure by local treatment, rightly directed and persistently pushed by dentist and patient. Constitutional treatment will not prevent the disease, any more than it will cure it. Local interference to prevent, check and cure is the true line of action, and if not advocated and practised, the disease will prevail and increase, and thousands of teeth will be sacrificed daily, that can and should be preserved.

Why do I suggest local interference as a preventative? From this fact chiefly, that with individuals and in communities where the use of the tooth brush is a daily practice, the disease does not prevail as with persons and in communities where the use of the brush is neglected.

The shape, size, texture and length of bristles, and space between rows are all important and should be carefully considered. A tooth brush for most effective cleansing of teeth, should never be more than an inch or an inch and a quarter in length (space for bristles); and from fourteen to twenty tufts of bristles is quite sufficient, and decidedly better than to have more. A very large majority of tooth brushes on the market are objectionable, and when used are more injurious than beneficial to teeth and gums.

In the earliest stages of the disease in question, before the formation of deposits on the roots of teeth, (never found on the crowns) all that is requisite for the check of the disease and restoration of the gums to a normal state, is the free use of a suitable tooth brush. Dilute sulphuric acid and pulverized pumice stone, after which the use of the brush daily, and occasionally forcible finger pressure upon the gums, will prove all sufficient and a sure guarantee against a recurrence.

If not treated before deposits are adherent to roots of teeth, as always prevails in advanced stages, then scalers (smooth edge) must be used persistently, and forcibly if necessary, for thorough removal of every particle of the deposit. Nothing short of successful removal of the deposits will check progress and insure a cure. There is no one or a dozen remedies known to the profession, whether applied locally or taken internally, that will effect a cure, unless the deposits are first removed, and if removed successfully there will be little need of remedies, local or internal, or of long continuance of them. As regards remedies I will say emphatically the fewer the better.

<b>Etiology and Treatment of Pyorrhea Alveolaris</b>	To enumerate the numerous theories as to cause of pyorrhea alveolaris, so called, or mention one-twentieth of the remedies recommended in treatment would be taxing to patience, a great waste of time, and of no profit to any one. I will instead, state my convictions based upon careful investigation and results in practice. The disease is well defined, distinct and disassociated from other diseases of the gums and alveolar process, and is not dependent for origin upon local injuries to the gums, or the abnormal condition of any organ in the human body, but is original and spontaneous, and never the effect of a remote cause. It is readily recognized, quite as easily diagnosed as any other disease, and if treated rightly, can be cured, but if neglected pursues a progressive course, resulting in the destruction of the periodontal membrane, alveolar process and finally loss of teeth. It yields readily to appropriate treatment, but ignores false treatment stubbornly. In the earlier stages, if treated successfully, and reasonable care of the teeth and gums are observed, there will never be any recurrence. When more definitely marked, and there is discharge of blood and pus, with gums swollen and separated from the teeth, with deposits formed and firmly cemented to roots, scalers must be used, and upon the use of them will hinge success or failure. A perfect cure cannot be effected until every particle of deposit in contact with soft tissues has been removed. After use of scalers and thorough syringing and washing out the pockets for removal of detached deposit matter, the tooth brush must be freely used, also heroic and persistent use of sulphuric acid, campho-phenique, carbolic acid, etc. Such treatment continued for a week or fortnight will insure gratifying results. In a large majority of cases, a cure can be effected in less than ten days, and if instructions as to use of brush and finger pressure are strictly observed, there will seldom be a return.
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The removal of teeth is advisable whenever as much as three-fourths or two-thirds of the surrounding alveolar process has been destroyed, for it is not possible for teeth to be retained firm in the sockets when so much

of the alveolar support is wanting; therefore the use of ligatures is worthless. The gums by proper, persistent treatment can be made to hug the teeth closely, but will never reunite with the cementum as in the normal state. Some dentists contend that there is reunion of teeth and soft tissues after destruction of the peridental membrane, but such has not been my observation or experience in practice. My judgment, after long experience in practice and watching results carefully, is that no line of treatment can effect such a result after destruction of the peridental membrane. The membrane once destroyed by the ravages of the disease cannot be restored. Assertions to the contrary are not well founded, and when tested will prove erroneous.

**Chiseling  
of the  
Process Unnecessary.** The practice of chiseling, burning and scraping away affected portions of the alveolar process as a means of checking this disease is unreasonable and almost as much out of line with advanced surgery as the wholesale extraction of teeth advised by some, and the extreme treatment recently proclaimed by a distinguished member of the profession, who said in a discussion: "I treat pyorrhoeal pockets as fistulas; when you have done it let nature alone. I treat the case surgically, burn it out, treat it as a fistula in any part of the body." He treated a case two hours the first time and said: "I went right through the whole thing, burned it out as if it were burning out a cancer." Such practice is radical in the extreme, and never requisite.

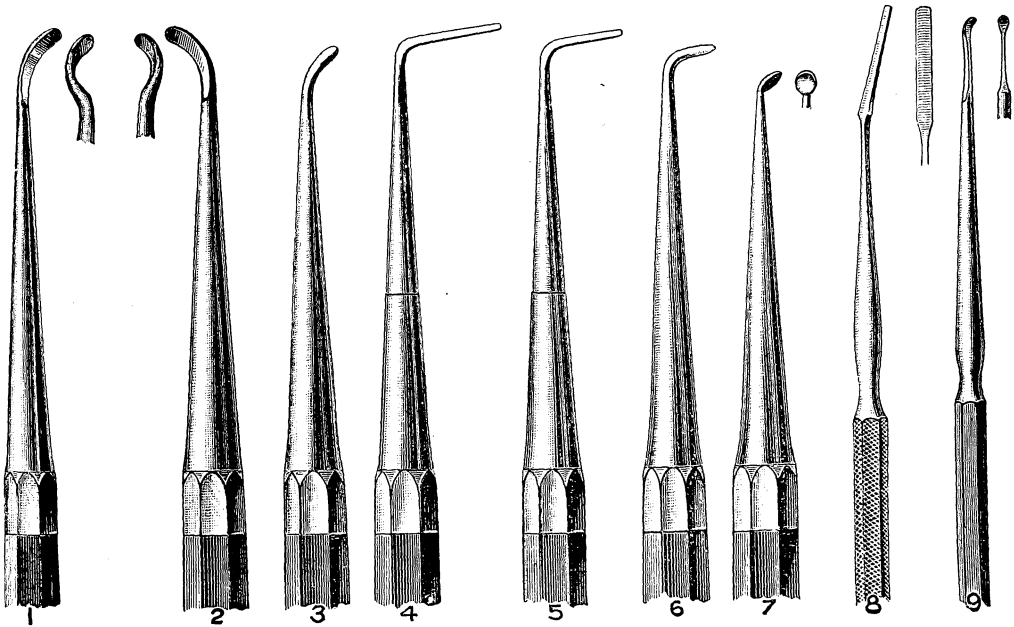
In evidence against the extreme practice above mentioned, chiseling, burring and burning, I will cite a fact well established. In extreme typical cases, when the process is much softened and wasted, and teeth very loose in sockets, to extract the teeth and do nothing more, will insure a cure and the process and soft tissues will soon assume a healthy state.

We must not lose sight of the fact that the softening and waste of the alveolar process in this disease is the effect of a cause. Obliterate causes and remove consequent deposits from the roots, and satisfactory results will follow. Such would not be the case if the alveolar process were truly a factor in the disease.

**Prevailing Theories  
Pronounced  
Erroneous.** It is contended by some dentists of high position in the profession, that now and then, in well marked cases, advanced to the stage of free discharge of blood and pus, there are no deposits on roots of teeth. This is an error in diagnosing. I deny the possibility of correctness of such a treatment and defy any dentist to produce such a case for inspection. The deposits are never wanting in advanced, extreme cases, and there is no such thing as flow of blood and pus in this disease in the absence of deposits.



There is an erroneous theory heralded and credited by many, that pyorrhea deposits are never to be found on the roots of devitalized teeth. Such a declaration has no foundation in fact. My experience has established contrary convictions. I have, when treating the disease, removed deposits from the roots of devitalized teeth, and have yet to realize by vision or otherwise, any difference in quantity or quality of the deposit removed from the roots of teeth in a normal or abnormal state. Occasionally we meet with cases where there seems to be less deposit on a devitalized tooth than others; then again we will find roots of devitalized teeth thoroughly coated and very little upon the roots of vital teeth adjoining.



Another theory prevalent, I will mention, and must condemn. That metallic bands and capping the teeth with metal, will cure the disease. Such practice has proven worthless. Such theorizing brings no good results, but is harmful, and prevents a right conception of the true nature of the disease, precluding the possibility of a general acceptance of correct ideas for successful treatment. The lamented Dr. W. H. Atkinson, always progressive and ever ready to experiment, tried banding the teeth with copper in a well marked case of pyorrhea, for twelve months or more, and failed utterly to effect a cure.

**Proper Use  
and Shape  
of Scalers.**

The important essential to be considered in treatment of the disease, is the right use of properly shaped scalers. Many of the scalers on the market are very impracticable and worthless. But few scalers are requisite; all should be of spring temper and smooth edge, never sharp enough to make perceptible impression upon the cementum. The deposit should be removed by pressure, pull and push motion chiefly, never by scraping and cutting with sharp scalers, as is the practice of many dentists. If deposits are so located as to preclude the possibility of dislodging with scalers, then extracting is legitimate and advisable.

If asked how and why it is that sulphuric acid acts favorably in treatment of this disease, I cannot answer definitely. I only know it to be a fact, through practice and results, and so it is in the use of many remedies in treatment of sundry diseases, by dentists and physicians. We only know that good results are obtained, but how as regards properties and action of remedies, we cannot explain.

The acid unquestionably acts favorably upon the gum tissues, as evidenced by results, and it is an established fact that the application of sulphuric acid to diseased bone is one of the best and most effective and reliable remedies known, and is extensively used in surgical practice. As a dissolvent it has no equal.

In conclusion I will state that there are several features, never varying, connected with this disease, that should be carefully considered, and when well established will prove safe guides in diagnosing and treating. The disease always presents at the gingival border, the inflammation throughout the disease from first perception to loss of teeth is strictly confined to gum tissues and never advances beyond, the gums are never as acutely sensitive and painful to touch and pressure as when inflamed from other causes. Likewise the periodontal membrane. The deposits are always confined to the roots of teeth and never found upon the crowns.



## Ancient Dentistry. Some Errors in Dr. Ledyard's Paper Corrected.

By WILLIAM H. TRUEMAN, D.D.S., Philadelphia, Pa.

The paper on Ancient Dentistry, by Dr. Ledyard, in the October ITEMS, is a valuable contribution to a much neglected subject, and well merits a careful and retentive reading. As found in the ITEMS, it contains, however, a few inaccuracies, due in part to the writer having mistaken romance for history, and to his having neglected to verify his authorities.

**Who First  
Filled Teeth  
With Gold.**

On page 750, quoting from Cigrand's History of Dental Prosthesis, he says: "To a German dentist, Dr. Meare by name, we should be grateful for inventing the process of filling teeth with gold leaf."

Dr. Meare, permit me to suggest, is the legitimate offspring of a careless writer and the printer's devil, both of which had full swing in the make-up of Dr. Cigrand's book, in both its first and second editions, and have robbed it of much of its value. There are in it so many inexcusable errors that any statement he makes is clouded with doubt, unless verified by a more reliable writer. The above quotation is a case in point. Except that, without warrant, he has added the "Dr.," Dr. Cigrand gives the name correctly; it should be Mesue; it is also written Massooa, Massoua, or Masua, mere lingual variations. He was not, however, a German dentist. He was an Arabian savant, physician to Haround-al-Raschid, the principal hero of the Arabian Nights Entertainment, and had been dead seven hundred years or more when the pamphlet Dr. Cigrand credits him with writing was published. Dr. Cigrand bases his assertion upon a pamphlet issued in Germany in 1541, a translation of which may be found in the *Dental Cosmos*, Vol. XXIV, page 1 (January, 1887).

He assumes<sup>1</sup> that it was written by Dr. Mesue, and has added it to a list of dental works published in Germany prior to 1800, under the title of "*Behandlung der Zaehne (Zahne)* Mesue, 1541," a title it does not possess in any of its various editions.

It must have been a careless reading indeed, even of the translation published in the *Cosmos*, that conveyed the idea that Mesue was the writer of the book; he is referred to, as other writers are, simply as authority for the statements made. I have an earlier copy of the same, printed by Peter Jordan, at Meyng, in 1532, the earliest that is known, on the title page of which it is distinctly stated that it is compiled from the writings

<sup>1</sup>History of Dental Prosthesis—Cigrand, 2d ed., page 158.

of Auicenne, Mesue, Cornelii Celsi, Plinii, etc.; and on the margins are notes referring to various works of the writers quoted. It is anonymously written, and may be traced under slightly varying titles, nearly a century. It belongs to a class of unreliable publications, by anonymous writers, for general readers, of which we have many examples, dating from the earliest days of printing to the present; dealing with matters of health, etc., giving as authorities, for the most part, inaccessible writings. Any statements they contain should be received with caution. Now and again, as in this case, they have historic value. This book we may safely say suggests that prophylactic dentistry existed at an early date, and that gold was used for filling cavities of decay, at least as early as the date of its first publication. As to who invented filling teeth with gold, it is silent. Under the title "*Zene Artzney*" may be found in the Army Medical Library at Washington a reprint of the 1532 edition, in modern German<sup>2</sup>, printed at Berlin about 1891 or '92.

In the next paragraph is another quotation from Cigrand, which the types have made a worse blunder than is the original. 1759 was no doubt intended to be 1579, and Ambrose Parr, Ambrose Paré, (Ambrois Paré, in French). Cigrand omits the accent over the e in Paré, which makes a world of difference in a Frenchman's name. Ambroise Paré was not known as "the barber dentist;" the title was unknown in his day and land, indeed, it never existed anywhere, or at any time; but he was known preeminently as *the barber surgeon*, and familiarly as the father of modern surgery.

I am impressed that the significance of the title, Barber Surgeon, is not at this time fully understood. When we remember how very little was known concerning human anatomy and the intricate operations constantly going on within the human economy, the barber surgeon of Paré's early day was, especially in France, fully competent to meet all the requirements of his science. As the science of hair cutting and shaving, tooth extracting, blood letting, leeching, and general surgery, embraced by the calling, Barber Surgery, gradually advanced, it naturally broke up into specialties. The disunion of the tonsorial and surgical branches has been slow; it is not yet complete. Paré started the educational movement that eventuated in a separation; it has not, as yet, however, raised the surgeon to the level of the physician; it has not as yet overcome the notion so firmly implanted in the medical mind, that any connection with mechanical appliances or tools, impairs the dignity of the calling. Any one who will take the trouble to study the early his-

<sup>2</sup>The Dental Review, Vol. VI., Feb., 1892, page 173, says the translation was made by Erich Richter, M.D., D.D.S., of Berlin.

tory of our science will never for a moment tolerate the expression that in early days the only dentists were barbers; it is not true. Tooth-pulling is not dentistry, and never was, the General Medical Council of Great Britain to the contrary notwithstanding<sup>3</sup>. Barber Surgery and Dental Surgery were two separate and distinct coexistent sciences, and were represented by the Barber Surgeon and the Surgeon Dentist.

Our science has a literature of which it may well be proud, all its own, reaching back without a break three hundred years and more. Thomas Berdmore, when he wrote in 1770<sup>4</sup>, "I could only have quoted a few French authors, who have written *to make their names known*, and one or two English, who have translated very injudiciously," was right so far as the English were concerned, but of the French he lied outrageously, prompted thereto by the keen competition of better equipped and more skillful foreigners.

Hemard, Fleurimon, Jourdain, Fauchard, Girauldy, Bunon, Mouton, Lecluse, and Bourdet, are a few among the many of his Gallic neighbors, Surgeon Dentists, of whom he so slightly speaks. No one unacquainted with the works of these writers, and their German, Spanish and Italian compeers, is competent to speak of dentistry as it was a century and a half ago. To the student who confines himself to the English tongue, the early literature of our profession is a sealed book, and he may well exclaim, "it amounts to little."

Who was Dr. Fauchard, and Dr. Lemaire? If it is reprehensible to confer degrees, recklessly, upon the living, it is equally so to thus insult the dead. Sir John Tomes is a name we all know, honor, and respect,—but Dr. John Tomes, the celebrated dentist of London, suggests an advertising quack. Pierre or Peter Fauchard, and Joseph Lemaire, we know; tagging to them a title which they did not possess while living, is more than a silly affectation; it is juggling with history.

Dr. Ledyard is in error in supposing that the denture represented in Fig. 4, must have been supported by some kind of spring. As a rule they were so intended to be. I have seen, however, full dentures on gold and silver plates shaped precisely like

that, worn without springs of any kind, and I have watched them across the table as in their owners' mouths they have taken "corn off the cob," apparently with as much ease as though they were firmly implanted in the jaw. There was in these cases no suction; in some that I have seen, worn for many years, the fit was imperfect, and the plate no wider than

<sup>3</sup>British Journal of Dental Science, Vol. XL., Sept. 1, 1897, page 786.

<sup>4</sup>Berdmore, on the Teeth. New ed. London, 1770, preface page vi., or American reprint of the same, Baltimore, 1844.

in some so-called removable bridges. Now, how were they held? We will let Mouton, a Surgeon Dentist of Paris, who in 1746 wrote an interesting book upon prosthetic dentistry, answer. Translated, he says: "If by this time we are curious to know the reason why the muscles of the cheeks are able to hold the dentures, and prevent their being displaced during the various movements the mouth and its appendages are constantly making, let us observe the mechanism, or the working of it during mastication. We observe that the muscles of the cheeks and of the tongue bring the food under the teeth, and there hold it in order that the teeth may be able to divide it. Or again, all the parts compress and assemble the food continually under the teeth, and the teeth opposing its escape is the reason why they are held,—these pieces, shaped like teeth, and in the place of the teeth. It is not more difficult to comprehend why two rows of false teeth may be firmly held by the natural force of the cheeks, than it is to conceive, concerning this point, how an artificial eye is held in place. We know that it is retained within the orbit by means of the eyelid, which moves over it continually without moving it sensibly; but the eye is imperfect because, when the eyes see, they move in diverse directions, and are not fixed except in certain cases. The artificial eye is therefore more like the dentures of which I speak." While this explanation is not very lucid, it shows that this writer had observed cases, as other writers had, where the denture was satisfactorily held by what has been termed adaptation, in contradistinction to suction. The suction principle was discovered and announced by James Gardette, of Philadelphia, about 1800. The denture exhibited by Dr. Ledyard may have been one of these exceptional cases, or it may have been made as a show piece, and not worn at all. In passing, I may observe that Mouton was far in advance of that which many suppose the science to have been in his day. He fully appreciated the value of the natural teeth, and strongly urged that every effort be made to preserve them in an effective condition. He regulated irregular teeth, cleaned and filled with gold leaf defective teeth, ligated loose teeth, inserted dowel teeth, and the old fashioned bridges. He replanted and transplanted teeth, claiming that under favorable conditions the operation was usually successful. He also restored to usefulness badly worn teeth by covering them with gold shell crowns, just as we do to-day<sup>6</sup>. His book was written for the general public, and is not even suggestively an advertisement of the writer. He makes no claim of originality, or to be able to do better than others; he simply states what dentistry can do to preserve and restore the dental organs.

The Dissertation on Artificial Teeth, by M. Nicholas Dubois de Chemant, as he later styled himself, first appeared in French, dated Paris,

<sup>6</sup>International Dental Journal, Vol. XVIII., Sept., 1897, page 639.

1788, and now and again dated from London or Paris, appeared in French or English until about 1824. It is purely an advertisement. His claim to the invention of porcelain dentures was at the time bitterly contested. There was published, during the controversy, quite a fusillade of pamphlets, none of which I have so far been able to obtain. His dentures were what we would now call mineral plate, or a continuous gum without the platinum base; with the *split beans* he had nothing to do; they came later and were made in France. Neither he nor his porcelain was kindly received by the English dentists\*. Jobson, writing in 1834, says: "When these mineral or china teeth were first introduced into this country from France, (for it is to our neighbors on the opposite side of the channel we owe these, as well as many other similar ephemeral productions) the most extravagant expectations were first formed of them; but few, or rather none of the advantages which they were supposed to possess have been realized, and they are now considered to be a complete failure. They have never been much used by any of the leading dentists of the day, and I believe are now wholly discountenanced by the respectable part of the profession, although they still reign paramount with the disreputable."

**The First  
American  
Dentists.**

Without detracting from the honor due to Joseph Lemaire, he was not the first practicing dentist in America. Robert Wooffendale, a pupil of Thomas Berdmore, came to New York in 1766, remaining, however, only a few years. A Dr. Baker, of whom little is known, was before Lemaire in Philadelphia, and Isaac Greenwood, a native born Bostonian, is credited with being the first dentist in that city, practicing as early as 1770. His son, Clark Greenwood, and several others were in New York; and Baltimore also had practitioners of our art prior to Lemaire's visit.

I am strongly impressed that Figs. 14 and 15 are of French, not English make, unless they are of a very recent date. The first English porcelain teeth put on the market were the tube teeth about 1839 or '40, made like and to replace the crowns of the natural teeth previously used, and were intended to be mounted on bone or ivory dentures, like that shown in Fig. 5. Later they were used on metal plates. As late as 1875 I was shown blocks of ivory, in a London dental depot, prepared for carving such dentures, and was told that they were still called for, but had a limited sale that yearly was becoming less. In this country the French split bean was taken as the model, and porcelain teeth with pins, intended to be soldered to metallic plates, were on the market early in the

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\*Jobson on the Teeth, Edinburgh, 1834, page 231, or American reprint of the same, Baltimore, 1844, page 111.

thirties; they were known in England as American teeth, and were often there used by first soldering the backing to the plate, and then riveting the teeth to the backing. I have seen many such dentures of English make, on which Stockton's early teeth were so used. The English people are strongly wedded to their old ways, and English dentists were hard to convince that American, or any other porcelain teeth could be safely soldered.

In conclusion, permit me to suggest, to those interested in studying the early development of Dental Science, that they will find much of value in the many treatises written in Latin, beginning with that excellent one by Eustachius, published at Venice, 1563, entitled *De Dentibus*. They cover very well anatomy, pathology and histology. The more practical works are in French; while those in German form a hodge podge of fact and fiction, ranging from the most profound to the most trifling, with but very little originality. Any one conversant with its literature prior to 1800 will not for a moment tolerate the idea that Dental Science began in barber or blacksmith shops, or that it had its origin in the United States a little more than two generations ago.

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### **The Claim of Ancient Dentistry.**

By WM. F. GRIFFITH. D.D.S., Kankakee, Ill.

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I was much interested in an article in the October ITEMS OF INTEREST, entitled "Ancient Dentistry," but I differ from the statement quoted from Dr. Barrett, which reads: "I have never seen any reliable testimony whatever that prophylactic dentistry—filling teeth for preservation purposes—or any of what is now called operative dentistry, was practiced until within a comparatively recent period."

"The assertion that ancient Egyptians filled their teeth rests upon the error of unprofessional observers who mistook the gilding the teeth of the dead for gold fillings." He further says: "Gold was never used, in my belief, until within a couple of hundred years or less."

Now, it is true the teeth of the dead were gilded and ornamented, but there was a purpose in this. Let us consider the reason. We learn in Grecian and Roman mythology that when a distinguished personage died, such as a king or an emperor, the burial ceremony was accompanied with much pomp, and prominent in this adieu was the gilding of



the teeth. This was done because they believed the departed should meet the immortal gods in all possible grandeur and glory.

The link between life and death was the river Styx, and in order to reach Heaven, this morbid stream had to be crossed, and it was of material importance that the candidate should appear in a favorable condition before the god Charon and the ferryman, and the only way this could be accomplished was by the gilded teeth and copper coins.

"The passage was not very exorbitant, but the coin ticket was absolutely necessary, never less than one obulus (about one penny) and never more than three." (Dr. Cigrand.)

To secure a safe passage, the coins were placed in the mouth of the dead. A terrible doom awaited those not provided for the passage. They were to wander along the banks of the Styx for one century, after which time they would be permitted to enter the boat and cross to the judgment seat.

Now, while these people did and were skilful enough to gild their teeth, we have just as good reasons to believe that they also filled decayed teeth for preservative purposes. The most emphatic proofs of this truth were the specimens displayed at the World's Fair at Chicago.

The noted English surgeon, Sir Spencer Wells, during quite recent investigations states that the ancient Etrurian people had their teeth filled with a fusible metal. The noted archæologist, Mr. Forbes, while in Etruria and Rome, discovered that many of the mummified dead had their teeth filled with gold and a peculiar amalgam. (ITEMS OF INTEREST.)

I quote the following from Dr. B. J. Cigrand, who has given much research to ancient dentistry: "In the museum at Cornets, Italy, can be found carefully guarded with lock and key, two specimens of ancient Etrurian bridge work. Their authenticity is undoubted since Van Marten, at present a Roman dentist, produced from Sig. Dasti, the royal inspector of excavations and exhumations at Cornets, Etruria, a certificate duly signed and sealed, testifying that said specimens of gold bridge work were discovered in the mouth of a corpse which had been entombed upwards of twenty-four hundred years ago.

"The cases were well made and the artificial teeth were carved from some animal's teeth. The artificial centrals and natural lateral and cuspid of the right side were in a fair state of preservation, and the entirety was retained in position by gold bands."

From Homer we learn that Esculapius used a narcotic to produce insensibility while extracting teeth, and that he was among the first to teach the art of tooth filling.

Among the twelve tables of the Greek laws, there is one to this effect—that the gold used to fasten the teeth might be buried or burned with

the body. In the *Cosmos* some years ago, there was an article which read: "In one of the royal mummies, taken from an Egyptian tomb, was discovered an artificial set of teeth in which the plate was carved to fit the mouth, and the teeth were of brass and ingeniously attached."

Heroditus, the father of history, in one of his works states that medicine was divided into many divisions, some taking the head, and some the teeth, etc., each being skilled in his particular branch.

It is delightfully true that there never was a time in the history of this old sphere when dentistry attained such a high standard of excellence as at the present. That never before did progress and science lend such a helping hand to suffering humanity. Yet, do we not do an injustice to history and those ancient people, when we ignore the records and specimens handed down to us?

**Evolution of  
Medical Science  
From Priestcraft.**

Now, I wish to digress just a moment to mention a few of the changes through which our noble profession has passed. Thousands of our young men enjoy, to the fullest extent, the privileges of this free country, and still have never given one serious thought, or read a single page, to find whence this liberty came. The same may be truly said of many of our brothers who enjoy the advancement in science and art.

About the beginning of the fifth century there was a radical change in the world's history, and all sciences and arts took a retrograde step; downward was the direction of thought and act for nearly one thousand years. Medicine and surgery alike fell into the hands of the heathen priesthood. These persons of course knew nothing of medicine as a science. Within their temples were mythological gods that were sure cure against certain diseases. The patient who had the price was permitted to enter the temple and patiently pray before his god until he imagined himself cured. I think they must have hypnotized themselves sufficiently for temporary relief, or else these gods of wood and marble would surely have been abandoned. From an ancient work Dr. Cigrand gives the following: "St. Appallonia guarded against toothache, St. Lucy against sore tooth, St. Anthony against inflammation, St. Germanus against diseased eruption, St. Marcus against neuralgia and St. Herbert against poisoned tooth."

But these heathen priests and physicians were prolific in their shrewdness. As an example, they erected a great temple and monument to Esculapius, who had been a real student and advocate of science. They worshipped him as the god of medicine, founded a society which bore his name, and only those who belonged to this noble class (something like the 400) were recognized as physicians.

But, alas! Can any good come out of Nazareth? In the midst of all this came young Hyppocrates who, by the way, was a son of a priest physician. Although he was taught from infancy in this superstition, he denounced the entire teaching as fraudulent. To do this surely required no little stamina of character. He met opposition on every hand, but it only rekindled his zeal, and he taught those under him that medicine was based on scientific principles and not on superstition.

His mind was not entirely devoted to medicine, for he made very close observations of the mouth and teeth. Many of his quotations are put into practical use to-day, such as "Cold drinks effect and injure the teeth," "Ulcerations of the gums can be cured if proper care be given them in time," "Diseases of the breast, throat and ears are often caused by diseased teeth, and the only cure for the former is the healing or removal of the latter."

After the death of this noted personage, there was none left to defend the cause of science, and Pliny states that the priests again became the recognized surgeons and "taught the science with many occult and mysterious ceremonies well calculated to impress the vulgar, and excite belief in their miraculous power."

Thus did medicine and surgery remain in darkness until the fourteenth century, when a council of the Roman Church declared that the priest physicians had no right to practice the science and perform operations, and by this decree the goldsmiths, blacksmiths and barbers, who had held but a timid place in the professions, were given supreme control. But the barbers assumed the leading rôle in this great drama, and were the star players for centuries. About the beginning of the eighteenth century there were a few who thought that dental surgery should be placed on a higher plane, and labored to that end. This action, however, only incited the leading barbers to try to capture the profession, and they separated themselves from the more common class and clothed their calling with the dignified term of barber-chirurgeons, but this was not an enduring scheme, for so arduous did the then few dentists labor to snatch from these common artisans the noblest profession that ever existed, that in 1743, Louis the XIV. of France, separated the dentists into one class and the barbers into another, each one to follow strictly his own calling. A similar change was made in England a few years later. These are the first dates since the science fell centuries ago, that it has been placed upon a recognized legal basis.

There are many early advantages of professional dentistry that deserve much more than the mere mention of names—whose memory, whose works and efforts we should always hold in the highest esteem. But while I am writing, I stop to look across the street, and behold, there

is a large gathering of men and women. Is it a gospel meeting? No. Is it an auction sale? No. Is it a campaign speech? Not at all. But it is an exposition of the most menial form of dental service. An education of the people to sacrifice precious organs.

Painless extraction, and painless everything, and this is going on all over our land, and little is being done or said to prevent the public from being humbugged and robbed by these quacks and scavengers. How long are the leading men of the profession going to permit this sort of practice? What is the solution of this problem?

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### **Vulcanizable Gutta Percha.**

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By DR. J. L. DOGGETT, Roanoke, Va.

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I noticed some time ago in the *ITEMS OF INTEREST*, a reference made to vulcanizable gutta percha as a base for artificial dentures, and as I remember there was an intimation that the manipulation of it was similar to that of rubber. Now while this can be done, yet the true manipulation of vulcanizable gutta percha is altogether different from that of rubber, after the teeth are ground up. True, to this point it is the same, but after this, the wax plate is discarded and a plate is made of the vulcanized gutta percha on the model just the size that is desired, and the teeth are cleaned of all the wax that adheres to them and heated slowly so as to prevent cracking, and are arranged on the plate on the antagonizing model just as they were on the wax plate, and then the plate is built up, and the edges smoothed down with a warm wax spatula. The case is put in a flask and invested, and as soon as the plaster sets, it is ready to vulcanize.

Take one hour to run the mercury to 320° and keep it there just forty-five minutes and the piece is thoroughly vulcanized. I claim the following advantages over rubber for gutta percha vulcanized by the above process:

1. There is no opening of the flask after the case is once invested.
2. No escape grooves are needed.
3. No cracking of the blocks.
4. No press needed.
5. No breaking down the fine lines on the model by forcing the flask—which sometimes occurs with rubber—impairing the fit. The expansion being so gentle and plastic as to copy accurately the model as well as the finest hair line on its surface.

6. Any thickness of plate can be easily obtained with perfect accuracy.

7. Vulcanized gutta percha is much lighter than vulcanized rubber; consequently the former is far preferable for upper plates.

8. It is thought to be much tougher than rubber and not so liable to break.

9. Nothing can surpass it as a mending material.

10. It can be invested and vulcanized in a tin box wrapped with wire as well as in a flask.

11. The most difficult undercut is managed without trouble.

I have worked it for twenty-five years and know whereof I speak, and I claim that if the manipulation of it was understood by the profession, it would take the place of rubber altogether.

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## **A Simple Treatment for Alveolar Abscess, With Fistulous Opening.**

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By DR. T. M. JAMISON, Okolona, Miss.

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I doubt if there is another subject, on which so much has been written, with so great diversity of ideas, as the treatment of abscess in dental practice. It is not my purpose to discuss the pathological conditions that exist in these cases, as this would involve a treatise on pulpless teeth, a subject that I regard as one of the most important and exhaustive, as well as the most scientific operations in dental practice.

An abscess, as commonly understood, is a sac or continuity containing pus, situated at the end of a root, with a dead pulp. In nearly all cases of abscess of long standing, necrosis occurs, and it is then that we have what we term chronic abscess, with fistulous opening. It is this phase of the subject that I desire to discuss.

In the first place we must presume that the pulp canal has been permanently filled, as this is the most important step in a permanent cure. As the fistulous opening does not always occur directly over the seat of the disease, the abscess can be located with a small probe or canal plunger. It is necessary to dissect away the gum over the diseased bone, and with a round bur cut away all affected alveola, and, if possible to reach the abscess, cut away a small portion of the apical end of the root. Wash out the cavity thoroughly with warm water so as to remove all debris. Inject peroxide hydrogen liberally, i. e., until all signs of the presence of pus have disappeared, and pack the cavity with iodoform gauze.

I find iodoform very unpleasant for most patients, and by the addition of two drops of the oil of cloves mixed with vaseline, I am able to render the iodoform nearly odorless and possibly add to the antiseptic properties of the treatment. I have treated a number of cases by the use of Marchand's glycozone instead of iodoform and can report satisfactory results,—the glycozone being entirely pleasant for the patient.

This treatment should be repeated every twenty-four hours until the pus cavity seems perfectly clean. This can be determined by the injections of peroxide hydrogen, as there will be very slight effervescence when injected into the cavity, when a final dressing can be left in the cavity and it will heal without further treatment.

I have a record of one hundred cases treated in this manner without a single failure.

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## **A Successful Method of Tipping Porcelain Facings Especially Adapted to Direct Occlusion in Crown and Bridge Work.**

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By DR. FREDERICK R. SANDUSKY, Nashville, Tenn.

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Grind and adjust facing in the usual manner, then with 32 g. 24 k. gold place on a backing (having the pins standing), and burnish over the cutting edge and fully on a level with the labial surface of the facing; then place on a backing 30 g. 22 k. plate exactly the same size as the first, and instead of burnishing over the cutting edge, let it protrude. Both backings being of the same size, this forms a groove all along the cutting edge. Then bend the pins well down burnishing the sides. Invest (cutting edge uppermost) in either sand and plaster, or marble dust and plaster, entirely covering the porcelain; flow 20 k. or 22 k. solder along the exposed groove, after which the edge can be shaped with carborundum wheels or files in any way indicated by the occlusion. The edges can be finished so that little or no gold will show, and at the same time be an invaluable protection to the facings which are so easily fractured in cases of direct occlusion.

After having given this method a great many trials, I am convinced of its value, and offer it hoping to alleviate for some one a very annoying feature in crown and bridge work.

# SOCIETY PAPERS

## Dr. L. P. Bethel's Method as Applied to the Treatment of Root Canals With Alveolar Abscess.

By HENRY BARNES, M.D., Cleveland, O.

*Read at Twenty-seventh Annual Meeting of New Jersey State Dental Society.*

With the older and more recognized methods of pulp canal treatment you are all more or less familiar. I do not purpose bringing to your attention a specific in this direction, but beg your careful consideration of a method lately advocated for the treatment of special cases, using the silver salts, especially the nitrate. Dr. Crede, of Berlin, has lately called attention to the lactate and citrate, and Dr. Bethel to that of the nitrate.

There are those who claim to reach every portion of the minute root canals. The writer does not, hence the treatment here proposed. I do not know how better to present this subject for your consideration than by citing a number of special cases, their treatment and result. These cases were among the most unpromising of any which have come to my notice for a long time.

### Nitrate of Silver Cataphoretically in Abscessed Teeth.

Case 1. June 17, 1896. Mr. G. Age sixty years. Second left inferior molar. Blind abscess with canals quite small. Previously treated with oil of cassia. Cleansed with three per cent. pyrozone, dried and used seventy-five per cent. nitrate of silver cataphoretically, twelve volts for five minutes. Filled canals with chloro-percha and gutta percha at same sitting. Good result.

Case 2. Mr. D. Age twenty. Acute alveolar abscess in right superior second molar. Removed remains of pulp tissue, washed out canals with electrozone, dried with cotton pellets and hot air. Applied seventy-five per cent. nitrate solution cataphoretically, twelve volts for five

minutes (Wheeler selector). Roots were filled at the same sitting with chloro-percha and gutta percha. No soreness or after trouble. Have treated two other cases for this patient without removing pulp tissue and with good result. The last two were emergency cases, the patients not having the time to give for the more perfect preparation.

Case 3. Miss E. Age twelve. Very putrescent roots; abscess in the first inferior left molar. Could not even place cotton in the tooth without causing pain. Treated with all known remedies without avail, and in desperation used twenty per cent. silver nitrate solution cataphoretically, twelve volts for five minutes. Filled roots immediately as in case 1. Treated August 15, 1896. Result perfect and no trouble to date.

Case 4. Mrs. N. Age sixty. Pulp of inferior right first molar very putrescent. General health of patient very poor, and there was every indication of failure in treatment. November 10, 1896. Removed all putrescent material possible from root canals, treated with electrozone, dried, applied twenty per cent. silver nitrate solution as before, filled canals at once. Soreness passed away and there has been no recurrence of trouble.

Case 5. Mrs. G. Age twenty-six. November 18, 1896. Putrescent and blind abscess. Treatment same as before, except that seventy-five per cent. nitrate solution was used. No pain during operation and no inflammation of parts following.

Case 6. Mrs. W. Age fifty-eight. November 18, 1896. Putrescent pulp canal and blind abscess in root of superior right lateral incisor. Root to be crowned. Treated with seventy-five per cent. nitrate solution, some of which was forced through apex of root. Face was swollen for two days, but neither tender nor painful to touch. Crown applied on fourth day after treatment. Result perfect.

Several cases have been treated without removing contents of pulp canals, and they responded to treatment with surprisingly good results. Several cases have been treated with lactate of silver, and the result thus far is promising enough to warrant a continuance of the same. These cases will answer for quite a number so treated and are indicative of the general result. One failure was due to using (as I now believe) sodium peroxide previous to the application of silver nitrate. I now prefer three per cent. pyrozone in all cases previous to nitrate treatment. The nitrate treatment is not recommended for all cases, as it is entirely unnecessary, but for the following: 1st. Emergency cases. 2d. Those troublesome and persistent cases which do not respond to the usual well known and successful methods. 3d. For small and tortuous root canals.



## Root Canal Filling.

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By A. H. PECK, M.D., D.D.S., Chicago, Ill.

*Read at Twenty-seventh Annual Meeting of New Jersey State Dental Society.*

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Root canal filling is one of the most important operations the dentist is called upon to perform. Indeed, I know of no other operation within the realm of our professional labors, which, if imperfectly performed, is capable of causing more suffering, or downright agony to the patient, than are the troubles resulting from imperfect or slovenly root canal fillings.

When one remembers that his patient may be subjected to all the torments attending the formation of an alveolar abscess, within the period of twenty-four hours or less, simply because he has neglected to thoroughly sterilize the contents of the root canals, or that the patient even months or years after the operation may be subjected to a similar experience because of the insertion of an imperfect filling, though the canals were in the best of condition, I should think one would never permit himself to do any but his very best, most painstaking, careful, considerate work in this connection.

In my judgment, this can best be accomplished by filling root canals in the following manner: Granted the canals are in an aseptic condition ready to be filled, they should be cleaned with peroxide of hydrogen, or some one of the several agents akin to it, that the gummy portion of the essential oils and other foreign substances may be removed, after which they should be thoroughly dried with absolute alcohol and heat, when the inner walls of the canals should be slightly moistened with eucalyptus, after which a very conservative quantity of chloro-percha of the consistency of thick cream should be passed in. Then take the gutta percha cone or point in a pair of pliers, and with a slight pumping motion press it into the canal as far as possible. Let it rest a moment. The chloro-percha and eucalyptus already there will soften the smaller portions of the cone, while that portion protruding from the canal should be softened with a few blasts of hot air from the syringe, then with the canal plugger cold or just slightly warmed so the gutta percha will not cling to it and be drawn away, the softened solid gutta percha should be thoroughly packed to the uttermost end of its future abode.

I most heartily believe that if one makes root canal fillings thoroughly, conscientiously according to the above outlined method, he has at least performed this operation in a manner best calculated to fully serve the future interests of both patient and operator.

## Management of Root Canals.

By L. ASHLEY FAUGHT, D.D.S., Philadelphia, Pa.

*Read at Twenty-seventh Annual Meeting New Jersey State Dental Society.*

My own practice divides the teeth into two classes—those which are amenable to immediate treatment, and those which require the most tender care.

The first class I dress at once with raw cotton saturated with oil of cinnamon, not forgetting always the guard ball described by Dr. Flagg, in the mouth of the pulp cavity. I more often place it in the mouth of each root canal, and then fill more solidly the pulp cavity.

With the second class, more cautious treatment is required to overcome what may be termed secondary inflammation. Here I try never to forget what I consider the keynote of this situation, caution; more harm comes from what you do than from what you leave undone.

The treatment is substantially along the same lines as with teeth of the first class, but final and permanent stopping must, if secured at all, be secured gradually. I say if secured at all, for there are cases, few though they be, which seem to resist treatment. These are to be kept in a comfortable condition by simply dressing the canals with the medicament only, a paste of chloroform and aristol, or of oil of cinnamon and aristol, and this dressing renewed according to the time in which trouble recurs. I have known the interval to be months, sometimes a year. In the meantime, build up the patient's health, for in these cases it is generally in a very depleted condition. A favorable change in the patient's systemic condition will usually, at last supervene, when, choosing this opportune moment, a permanent dressing with raw cotton and medicament can be effected.

### **Hot Air Used With Pressure.**

I have found hot air of great service in the treatment of pulp canals, and use it at the pressure of about two atmospheres. Dr. Register deserves all the credit we can give him, for his untiring efforts to develop this adjunct. He has spent considerable time and money upon experiments with it, his attention being particularly directed to secure a deliverance at the point of usage at a proper temperature. I believe that he has at last adopted the same plan that I have used for some time, finding nothing better—the attachment to the cold air jet of the ordinary S. S. White carbon hot air syringe. I believe that he uses to compress the air, a Buckeye pump attached to the water pipe; it needs no attention, but regulates itself, after once being attached in position.

When the pressure in the receiver falls to about twenty pounds, it gets to work and pumps it up to about two atmospheres, or a little less, and then ceases work until the next fall, so that no matter how much demand for air is made upon the receiver, the pressure is always maintained.

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## Root Canal Treatment.

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By W. H. WHITSLAR, M.D., D.D.S., Cleveland, O.

*Read at Twenty-seventh Annual Meeting of New Jersey State Dental Society.*

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The function of the dental pulp remains active during the construction of dentine, and when by reason of Nature's decree, a suitable form is attained, quiescence of the elaboration of calcareous materials ensues. Activity of the pulp may commence again when unnatural incentives give impetus to cellular action, and calcareous depositions occur. These activities may go so far as to almost obliterate the pulp canals filling them with a superabundance of calcareous material.

Now, all these processes are impossible after the pulp has been devitalized, and a retroactive or degenerative condition supervenes. The first perceptive evidence given is the loss of sensation. Coincident with this, there is a slow degeneration of the fluid contents of the tubuli, which becomes more active in the presence of decay and results quickly in putrefaction. The covering of these fibrillæ, that is, the sheathes of Neumann, are not so prone to degenerative processes and even remain intact when the inorganic substance about them is disintegrated. According to analysis, about one-fifth of the dentine is organic material, and this for the most part consists of the sheathes of the fibrillæ, because their fluid contents are practically omitted from the calculation.

The whole animal matrix is of the nature of ossein, but the sheathes of Neumann resemble keratin or elasticin. (Hoppe Seyler.)

Now, apropos to the subject of filling root canals, it may be an applicable illustration, not without a just comparison, that the surface of a root canal resembles the inner surface of the skin. What have we then to preserve? An organic body which is permeated by a matrix which once was alive, but becomes chitinous in character after a period of repose.

There is no known means of preserving inorganic materials, and we have only to do with making a mechanical support for them, and to place the organic matrix in a preservative state. The process of canal treatment and filling is, strictly speaking, supportive and preservative, and may be performed in either way, or include both methods. To be suc-

cessful in all instances, there is a conservation of tissue in view, and to use a homely expression, the treatment of a root canal is a tanning process if at all preservative. As in the preservation of leather, all fleshy parts, the pulp, recently devitalized or putrefactive in character, must be removed first. This is the common practice of every intelligent dentist. Then follows the use of antiseptics to inhibit the growth of bacteria.

**Chemical Agents  
in Root  
Canal Treatment.**

In this treatment there are three elements to consider; first, decayed dentine; second, fluid contents of tubuli; and third, the sheath of Neumann. When dental decay has progressed so far into a canal as to infect the tubuli to much extent, surgical interference is imperative, and as much of that territory as possible should be removed. Immediately upon the death of the pulp, the protoplasmic contents of the tubuli are drawn, or exude from them by reason of their intimate relations with the tissues of the pulp. There is more or less of this material remaining in the tubuli, and the sulphur which it contains is active or contributes proportionately to the putrefactive processes in that vicinity. It is upon this idea that, having devitalized a pulp, the operator should cleanse the canal of all organic material as soon as possible; otherwise the fibrillæ contributes toward putrefaction and the whole dentine is contaminated.

As already stated, the sheath of Neumann is made up principally of keratin and elasticin. Keratin which is closely related to the albumens, is found in all tissues developed from the ectoderm, and is characteristic of this layer just as hemoglobulin or globulin is of the mesoderm, or mucin of the entoderm. Elasticin is also closely connected with the albumens. As a treatment of these tissues it would seem that dilute sulphuric acid is rational and scientific for it causes leucin, a decomposition product to be dissolved out, and secondly it causes the sheathes to swell. The use of sulphuric acid for the purpose of raising or swelling the skins of animals was made known by McBride in 1778, and this is done to better prepare the skins for the final preservative. This gives us an idea which supports the use of sulphuric acid in root canals preliminary to filling them. But this is only one among several uses, and we are indebted to Dr. J. R. Callahan, of Cincinnati, for bringing its value to the notice of the profession. Nitrate of silver by cataphoresis gives eminently satisfactory results in preserving the internal ends of the tubuli, and is distinctively a tanning process, aside from its union with the lime salts. But, whilst nitrate of silver acts as a preservative, it is not entirely supportive; that is, it does not fill the canals completely. Under the head of supportive measures, the blocking up of the apical foramina is the principal one.

In cases of recent death of the pulp, it is often the only measure absolutely necessary, and this is why many cases are practically successes. Let putrefaction commence, and every nook and cranny must be filled after all obnoxious material is removed. Proportionately to the cleanliness of the canal is complete filling necessary. For prudential reasons, however, we have deemed it safer to entirely fill the canals.

The nearest approach to minerals similar to tooth structures, would seem to be the best materials for the purpose. At present this office is filled by the cements, of which the oxy-chloride of zinc is one of the best, because it is both preservative and supportive. It is not affected by the natural fluids which surround the tooth, should they become absorbed into the canal, and temperature does not lessen its quality. Gutta percha is only supportive, and deteriorates in a temperature of low degree.

The writer does not mean to indicate that oxy-chloride of zinc is the only filling material for all cases, for Nature tolerates many strange substances with equitable compensation, but it is believed that it produces as good results as can be obtained by other materials, filling the office of a preservative as well as supporting the tissue from invasion.

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### Thoroughness in Detail.

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By DR. E. H. ALLEN, Freeport, Ill.

*Read at Twenty-seventh Annual Meeting of the New Jersey State Dental Society.*

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The sum of the details of an operation make it complete. To render the operation perfect requires thoroughness in detail. When a case presents in practice more or less obscure symptoms, the only correct manner in which to proceed, is to apply the rubber dam and seek the cause of the trouble.

This procedure sometimes shows me that my first impressions are entirely wrong. This method, of course, applies to those cases where an exposed or partially devitalized pulp is expected.

To reduce pain and inflammation of the root of the tooth in cases of pericementitis, also the pain occasioned by a setting of a crown or bridge, apply hot water to the gums and about the root of tooth or teeth affected. For the application of the hot water, use a two-quart fountain syringe, hung about six feet from the floor, conduct the water through rubber tubing to the mouth of the patient, delivered through a nozzle with an opening about one-twenty-fourth of an inch; water to be as hot as can be borne in the mouth. The water can be taken out by the saliva ejector attached to the fountain spittoon. This will in most cases give quick relief.

One good, thorough treatment of the root canals of a devitalized tooth, to which the rubber dam has been applied, is worth a dozen careless treatments without the dam. I use three per cent. pyrozone to wash the pulp chamber and root canals; I literally flood the tooth with it. Then, getting all the parts as dry as possible, put in a root dressing such as Prof. Black's 1-2-3, oil of cinnamon, cloves or some other of the antiseptic dressings. You may use other medicaments, but I insist that thoroughness in removal of debris, and obtaining dryness by isolation with the dam, thus removing the probability of inoculation by saliva, is the prime necessity in the treatment of root canals.

My opinion is that none of us ever fill a root canal too perfectly. The root canal being dry, moistened with oil of eucalyptus, or the volatile extract of eucalyptus; this being a solvent of gutta percha, furnishes a ready path on which to flow the chloro-percha to be pumped into the canals; then follow with gutta percha cones. This method of root filling seems to come nearest to the ideal.

I wish to say a word on the subject of preparing cavities in the occlusal surface of bicuspid and molars. It has been my observation that many dentists are very careless about thoroughly cutting out the sulci of these teeth. Many dentists simply excavate that part which is actually decayed; then insert their fillings, not having excavated the sulci. It is only a matter of a short time when we have recurrence of decay at these points. Then again in the preparation of a cavity on the approximal surfaces of a bicuspid or molar, too little attention is given to excavating the lateral wall, both outwardly and inwardly; also towards the gingival margin. If the cavity be not thoroughly and sufficiently excavated at these points, the margins of the filling will not clear from contact with the adjoining tooth when the teeth assume their normal condition. Also, the margins should be beveled as much as possible and finely polished before inserting the filling.

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### **Treatment and Filling of Root Canals.**

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By C. R. JEFFERIES, D.D.S., Wilmington, Del.

*Read at Twenty-seventh Annual Meeting of New Jersey State Dental Society.*

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There is usually, no trouble following a fresh devitalization and extirpation of a pulp, if the canal is filled with any one material, or combination of materials, that may be rendered aseptic and an air excluder. But it is the treatment and filling of those roots that have been a serious disturbance to their possessors, by being the causes of alveolar abscesses,

to which our minds revert when this somewhat complex subject is broached.

One coterie of undoubtedly skillful operators declares that no coagulant should be introduced into an abscessed root, as such treatment closes permanently the tubuli, and renders nugatory further treatment. Others claim just as positively that if the tubuli are filled with septic matter, it may be rendered aseptic, and then, sealed up with the same agent, coagulant though it be, will do no further harm. There are good results from both methods.

To the mind of the writer, the important points  
**Treatment for** are to remove all septic matter and decay, get an  
**Abscessed Roots.** opening through foramen if abscess is active, wash  
 out with electrozone or borolyptol, preferably the  
 latter, for a few days, or until all fetor and exudation has ceased; if it  
 progresses favorably for a time, and progress is apparently arrested with-  
 out a cure having been effected, campho-phenique should be called into  
 use, and carried by any of the well known methods into the abscess. In  
 no case should the tooth be stopped with a tight plug of cotton after the  
 application. Should it be too tight to permit the exit of gases, where  
 there is exudation without external fistula, a lapse of a few hours places  
 the patient in a state of torment only equaled by a supposed visit to the  
 lower regions, but which is quickly reduced by the removal of the stop-  
 ping.

Given an abscess with fistula and open root foramen, dry out root,  
 fill with creosote or campho-phenique, and force freely through fistula  
 by any of the usual means, and you will have broken up the conditions,  
 and provided the pericementum has not been destroyed at the apex of the  
 root, you are at once on the road to a cure.

"These methods are old," you will say; true, but you may place the  
 best remedies in the hands of some men and have failures, because they  
 are not used intelligently, and for that reason some of the old methods  
 have been condemned.

When other remedies have failed, an application of a paste of iodo-  
 form, worked through the foramen with a broach, and covered with a  
 moderately tight stopping, will often complete the cure.

For the root filling, the writer has had by far the  
**Cotton as a** greatest satisfaction in the proper use of cotton with  
**Root Filling.** the indicated medicaments:

The writer regards it as most essential that, after  
 the root is prepared for filling, the apex be filled with campho-phenique  
 or borolyptol, to drive out from the extremity of the apex the globule of  
 air that otherwise might be caught under the filling. A previously pre-

pared very slender thread of cotton, with the finely attenuated point cut off, saturated with pure wood creosote (not a solution of carbolic acid) is carried to the apex and condensed little by little with a very fine spring tempered carrier, until three-fourths of the root are filled, when the excess of creosote is removed with paper and the operation completed, so far as the root is concerned, with gutta percha.

The claim is not made that cotton is better than anything else, but that it does its service equally as well as the best, and permits a comparatively easy removal when it is necessary to do so, as will happen with any of the others just as often, and which do not have that desirable attribute.

## How and Why We Treat and Fill Root Canals Our Way

By WILLIAM A. MILLS, D.D.S., Baltimore, Md.

*Read at Twenty-seventh Annual Meeting New Jersey State Dental Society.*

If the root canal is one from which we have removed the pulp, after having destroyed its vitality, either with arsenious acid<sup>1</sup>, fire<sup>2</sup> or friction<sup>3</sup>, we proceed as follows:

We swab out the root canal with a saturated solution of tannic acid in glycerol, after which we heat a tiny piece of pink gutta percha, and pass it gently to the apex of the root; then we fill the root canal with any of the filling materials, preferably cement.

This treatment we give all root canals where we can reach the apical foramen, and where we cannot, as in contracted or tortuous root canals, we force the tannic acid solution into the inaccessible pulp tissues; after which we fill in the same manner as in the accessible cases<sup>4</sup>.

### **New Method of Using Peroxide of Hydrogen.**

Where the pulp has died from any cause other-wise than that intentionally produced, we proceed as follows: At the first treatment we remove all carious and liquid matter from the pulp chamber, being cautious not to enter the root canal.

We then saturate a pledget of absorbent cotton with Marchand's peroxide of hydrogen and place it loosely in the pulp chamber; selecting an old steel instrument with sufficient face at the point to fill, or nearly fill, the entrance to the pulp chamber, we heat it red hot and place it upon the pledget of absorbent cotton.

<sup>1</sup>Formula: Arsenious acid 15 grs.; acetate of morphia, 5 grs.; mix and add sufficient wood creosote to make thin paste; afterwards add enough pulv. alum to make stiff paste.

<sup>2</sup>A red-hot instrument.

<sup>3</sup>A straight drill moving rapidly.

<sup>4</sup>In these cases no systemic conditions are considered.



Immediately steam is generated, oxygen is set free, both filling the root canal with considerable pressure. This is repeated three or four times, or until the patient says heat and pressure are felt within the tissues, outside of the apical foramen.

We then cleanse the root canal, after which we saturate a roll of absorbent cotton with a solution of equal parts of the tinctures of iodine and aconite, or tincture of iodine alone, and work it into the root canal; behind this we pack tight a pledget of cotton; fill tooth with temporary filling and dismiss the patient for a few days.

When patient returns, if no inflammatory manifestations have developed, we remove all temporary work, swab out the root canal with the tannic acid solution, and fill with pink gutta percha<sup>5</sup>.

In cases where there is a fistulous opening, we treat more heroically, and fill immediately. In all cases after filling permanently, we paint the gums at the apex of the root with the iodine and aconite mixture.

We use pink gutta percha because it is one of the best filling materials, and when placed in contact with living tissues, if perchance a little should project slightly beyond the apical foramen, it will cause no irritation, as we have often found such cases when extracting for artificial teeth.

The reason why we use it for the whole root canal in so called "dead teeth," is because no one knows, when systemic conditions are not favorable, what moment a sleeping volcano may be awakened, and it is the easiest material to remove to give vent to the explosion.

We use iodine and aconite, because they are the two most powerful absorbents we have, and if any slight irritation of the peridental membrane should be caused by operating, they will remove it promptly.

We use the tannic acid solution because when brought into contact with any remaining pulp tissues in the root canal, it forms an albuminate of tannin; a compound which is insoluble in any of the fluids of the surrounding tissues, and consequently no disintegration can take place to cause any after trouble.

We use Marchand's peroxide of hydrogen, because when a red hot instrument touches the absorbent cotton saturated with it, its water is turned into hot steam; at the same time a large quantity of pure oxygen is rapidly liberated, and being under pressure, permeates not only the root canal, but also the dentinal tubuli, oxidizing all septic matter.

Another reason why we use it is because, if there should happen to be a "blind" abscess, the hot steam and oxygen forcing their way through

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<sup>5</sup>In these cases all systemic conditions are considered, more especially those of a tuberculous diathesis.

the apical foramen, not only disinfects its contents, but also destroys the matrix<sup>6</sup>.

Our success has been satisfactory in cases of our own devitalization, much being due, we believe, to our manner of applying the arsenious acid paste; with pulpless cases, our failures have been about three out of ten, considering all conditions.

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## Treatment of Pulpless Teeth.

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By L. C. LE ROY, D.D.S., New York.

*Read at Twenty-seventh Annual Meeting of New Jersey State Dental Society.*

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One year ago at a clinic before this society, I demonstrated, "A method of curing by cleansing, asepticizing, and permanently filling putrescent or suppurative pulp canals at one sitting *that had not shown a failure in three years.*" I am able to emphasize that statement. *Four years* have passed since the adoption of my procedure in such cases, and still have to say that I "have not met my Waterloo."

The fundamentals of success in any operation upon pulp canals is the positive removal of all putrescent pulp canal contents, the sterilization of those canals, and finally the positive sealing of the apical end of the canal with some mild, non-irritating, permanently antiseptic, non-shrinking material, such as eucalypto-percha.

A synopsis of my general procedure may assist in the more perfect understanding of the method:

A tooth may be presented for operation, and may be acute or chronically abscessed with fistula or without.

The rubber dam is applied, and free access to the canals established. The Donaldson pulp canal broaches are used in removing the debris present in canals, and by the judicious handling of same, they will follow to the apical end of quite tortuous canals. Should the broach bind at all tightly in one or more of the canals, "The Callahan Method" fifty per cent. sulphuric acid, is used until the desired enlargement of canal is attained. The bulk of sulphuric acid is then absorbed, and finally made neutral by using saturated solution of bi-carbonate of soda, carrying that into the canals the same as sulphuric acid, until effervescence ceases.

Should sensation be present in pulp canal, such as exists near apical end of recently devitalized teeth, or the presence of an apical filament of

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<sup>6</sup>The same process bleaches the tooth rapidly. In cases where abscess is persistent after treatment, we curette the sac.

pulp, the sulphuric acid will act as an anæsthetic and permits painless procedure.

The bi-carbonate solution is then absorbed, but not necessarily perfectly dried. Deliquescent crystals of carbolic acid are then used (carbolic acid—c. p.), and allowed to remain in the canals until the permanent pulp canal dressing of eucalypto-percha is prepared, which is done for each operation by using any of the low heat gutta perchas in eucalyptus oil, which is a solvent of gutta percha, hastened by gentle heating on the office sterilizer, or otherwise, in a watch crystal. Root canals are then dried *thoroughly* by hot air, and nerve canal drier, such as the Evans.

This *positively* accomplished, moisten the canals with eucalyptus oil (by cotton on broach), then carry the eucalypto-percha dressing in very plastic consistency into the canals by means of smooth broaches until all are filled. A few fibres of cotton may be carried into this and packed at the apical foramen, especially if the same be large. Follow this with a gutta percha canal point, of proper diameter to admit of being carried and compressed in canal, for the eucalypto-percha will so quickly soften the gutta percha cone that it will permit of compression, at the same time forcing the excess eucalypto-percha from the canals into pulp chamber.

The eucalyptus oil has the property of expanding the gutta percha (the reverse of chloroform with gutta percha) and this most positively fills the root canals. The excess material in pulp chamber is then absorbed with cotton, the oil eliminated from cavity by using alcohol. The treatment of the cavity in tooth is then progressed with as is usual with one's method.

The general sequence of such treatment when instituted in cases where no fistulous opening exists, as I have described, is some pain during the ensuing day or so, and possibly some swelling over the root treated, but there will positively be no suppuration, and when that disturbance ceases, you can guarantee your patient that there will be no further trouble.



## Implantation and Its Associated Operations.

By RUSSELL HOPKINS COOL, D.D.S.

President of the California State Dental Association.

*Read at Pacific Coast Dental Congress. Reported by Clyde Payne, D.D.S.*

Gallileo was thrust into prison for asserting that the world moves; Dr. Morton was derided as a crazy enthusiast when he told the world of anæsthesia; the projectors of the Atlantic cable were declared as maniacs, and the great discoveries of natural laws and their application have always met with opposition of the most venomous and uncompromising description. To be sure, this opposition to scientific advancement becomes less and less as civilization progresses; but even in our own days of boasted culture and vast achievement in the field of science there remains a lurking spirit of absurd conservatism that would not do credit to the darkest decades of the Middle Ages. To-day the people who are imbued with this sentiment that stands like a rock in the path of human progress, do not burn, imprison and torture the victims of their displeasure; but by them the apostle of a novel truth is thrown upon the rock of vituperation, immolated within the pitiless walls of a blind prejudice and tortured by the fires of conscienceless misrepresentation.

It is not a matter for surprise, therefore, that when Dr. William J. Younger gave to the world the results of his discoveries and achievements in the matter of implantation of teeth, he was met by such a storm of opposition, ridicule, defamation and misrepresentation as would have completely discouraged an ordinary man. A howl like the wail of a banshee went up from St. Petersburg to San Francisco, and this truly great man was most venomously assailed upon all sides by people in and out of the profession.

But "the world does move," as the great Italian exclaimed under his breath after his public recantation; and Dr. Younger has lived to see his ideas indorsed and practiced and their truth demonstrated and asserted by the best men in his profession. True, the gospel has not yet spread to the uttermost parts of the scientific world, and there are yet some who, from their positions and professional standing ought to know better, and who yet affect to ignore this greatest of all discoveries in stomatology. Even so prominent a man as Dr. L. D. Shepard, president of the World's Columbian Dental Congress, in his inaugural address fails to mention implantation, although he devotes much attention to the discoveries of

Drs. Morton and Wells in the realm of anæsthesia. Perhaps the learned gentleman's scientific myopia is geographical in its origin, and that while he can clearly discern the achievements of New Englanders, his vision cannot penetrate further westward than the Charles River. Perhaps if Dr. Younger had been a descendant of some of the old Bostonian stove pirates or slave traders and a dweller at the "Hub of the Universe," instead of a Californian argonaut and a product of our own schools, the distinguished gentleman from the metropolis of Massachusetts might have looked with more favor upon him and the splendid boon which he has bestowed upon the profession and upon mankind in general.

Perhaps the best definition of implantation is that given by Dr. Louis Jack, of Philadelphia. It is as follows:

**The Various Operations of Tooth-Planting.**

"Implantation—Where an artificial alveolus is made by trephining the process at a vacant place, in which opening a suitable natural tooth is introduced."

Dr. Jack differentiates implantation from the operation known as replantation and transplantation in these definitions:

"Replantation—Where any given tooth of a person for various reasons may have been removed, and after certain manipulation of the tooth and treatment of the socket, is replaced."

"Transplantation—Where teeth removed from one subject are, with proper precautions, placed in an alveolus of another immediately after the extraction of a diseased or fractured tooth."

These three operations become related to each other by reason of the exigencies of particular cases. For example, in orthodontia it sometimes becomes expedient to extract a tooth, form an artificial alveolus and replace the tooth in the patient's mouth, using, however, a new socket prepared by trephining. This operation partakes of the nature of both replantation and implantation. Whether the use of the same tooth extracted facilitates the ultimate result or not, I am not prepared to state; but, of course, that procedure is most expedient because it saves the labor of "matching" the other teeth of the patient with a suitable alien tooth. In the treatment of pyorrhea alveolaris, it becomes necessary sometimes to remove a tooth, prepare an artificial alveolus and plant either the root of the tooth just removed or the root of a healthier tooth with the crown of the original tooth attached thereto. We have no single term to express either of the operations mentioned in the above illustrations, but perhaps none is required, as the difference between the operations of replantation, transplantation and implantation is, I think, sufficiently well understood.

In a paper of the scope of this one it will be impossible for me to discuss in detail the various theories of scientists regarding the union of

planted teeth and the histological process by which such union eventuates. In fact, there is great difference of opinion upon this among those who have made a study of it, and the observations of none of them seem to be conclusive. Dr. Younger still adheres to his theory of "persistent vitality of the pericemental membranes."

Dr. Oscar Amoedo, professor in the *Ecole Odontotechnique* of France, in a paper read before the International Medical Congress in 1894, recommended the decalcification of the surfaces of the teeth to be implanted, claiming that thereby the best results were obtainable. His theory is that of osseous union.

I may remark here in passing, that my own failures have all occurred in cases where the membrane has been destroyed. Therefore, in selecting teeth for this operation, I carefully examine each one with a powerful glass to determine whether or not the pericementum is intact. On the other hand, I have been successful with teeth in which small patches of the membrane were missing, but in such cases I have carefully decalcified the surface at those spots. Suffice it to say that whatever may be the scientific reasons for the success of plantation of teeth, certain it is that the result is satisfactory in a majority of the operations that are skillfully performed, with a due regard to the selection of teeth and avoidance of surgical infection. In this paper I shall deal with the practical and surgical features of plantation, rather than the histological theories.

All extracted teeth are infected, if not by specific

<b>Necessity for and Methods of Sterilization.</b>	infection then by the mere manipulation incident to their extraction. Therefore, the first principle of plantation, as well as of all surgery, should be and is asepsis. Without proper aseptic precautions, no operation may reasonably be expected to be successful. Formerly great reliance was placed upon carbolic acid and bichloride of mercury. But objections have been urged against the use of bichloride of mercury in preparing teeth for plantation, owing to the fact that any solution of bichloride sufficiently strong to be a useful germicide is destructive to the vitality of the tissues. Carbolic acid and its allied preparations, although excellent in their way, are objectionable because of the fact that they are coagulents. Trikiesol, used in solution of the strength of one-quarter or one-half of one per cent., is preferable to carbolic acid, it being absolutely sure and five times as efficient as carbolic acid. For a long time I used a saturated solution of boric acid. More recently I have been using Cabot's sulpho naphthol, two minims to the fluid ounce. This preparation I use for disinfecting my instruments, sterilizing the oral cavity and for securing thorough asepsis of the tooth itself.
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In preparing the tooth there should be a complete removal of all of the contents of the pulp canal.

Being a firm believer in the thorough sterilization of the dentine of the tooth, I advocate the use of a disinfecting agent, which, by its chemical action will destroy the mephitic compounds that occupy the tubuli. I have found nothing better for this purpose than the oil of cassia. Having thus treated the canals, I then proceed to fill them, and I know of nothing more suitable for that purpose than gutta percha. All deposits should be thoroughly removed from the external surface of the tooth and the tooth should be left in the antiseptic solution for several hours prior to performing the operation.

**Local Anæsthetic  
Recommended.**

Local anæsthesia is to the stomatologist what general anæsthesia is to surgery. The latter is the Lethean Stream into which the whole sentient personality is dipped and in which the quivering nerve forgets to bear its message of suffering to the brain; the former is the fairy wand that with airy wafture banishes the grim ogre of pain and makes the scalpel's skillful sweep a caress and a benison, rather than a terror and an agony. Thanks are due to the investigations and experience of members of the Stomatological Club for the fact that the various operations of oral surgery have become absolutely painless to the patient. In the different operations of plantation, I use, to commence with, about a thirty-three and one-third per cent. solution of cocaine (Dr. Younger's formula), employing a portion of a minim at a time. I seldom find it necessary to use more than from one-half to one and one-half minims of this solution. I then continue the operation with Dr. Clyde Payne's solution of one and one-half per cent. of cocaine. In this way I invariably secure a result that is both satisfactory to the operator and devoid of danger to the patient.

**The Incision  
and Preparation  
of Alveolus.**

No fixed rule can be formulated for the incision to be made in preparing for the insertion of the tooth. Much depends upon the local conditions, and the surgeon must consider the artistic appearance as well as the surgical success. To secure this there is no teacher like experience. An old soldier once said: "War is the only true school of generalship;" so operating is the only true academy of surgery. In the insertion of incisors and cuspids the operation known as the "flap operation" should be practiced. The line of incision being established the gum should be dissected from the alveolar process, care being taken not to cut out the gum more than is absolutely necessary to secure space for the tooth. With trephines and properly shaped burs with movable gauges, the length of the tooth and the depth of the alveolus

required may be ascertained. These trephines and burs are made in different sizes, so that the operator with a little practice can shape the alveolus in accordance with the contour of the tooth. A particular point to be observed is the thorough removal of all debris, using for this purpose one of the antiseptic solutions heretofore mentioned, and also employing pyrozone, or some other peroxide preparation, on account of the peculiar cleansing properties appertaining to such oxygenic preparations.

In preparing for the implantation of superior bicuspid and molars, care should be taken not to penetrate the antrum; and often, on account of the extreme thinness of the alveolar process, it is better, when implanting for bridge-work to turn the lateral surfaces of the root to the buccal and lingual aspects. Finally, to avoid all possibility of surgical infection, the mouth, and even the throat of the patient, should be sterilized by the use of pyrozone spray or something equally efficacious. Then the hands and instruments of the operator should, of course, be kept constantly moistened with the antiseptic. Next the alveolus should be properly dried and the tooth carefully and firmly inserted in the place prepared for it. The theory has been advanced that the tooth should be driven into the socket. This is not necessary, and such procedure is likely to produce irritation and cause a failure of the operation.

I have studied and experimented with splints, plates, pins, anchorages and the various other devices employed for retaining the tooth in position before attachment of the tissues is accomplished. These are all subject to the objections that they are uncleanly, cumbersome, uncomfortable to the patient, and that they interfere with articulation and mastication. Such devices are prolific sources of the failure of operations. For the foregoing reasons I have adopted the use of silk ligatures, employing Corticelli or Carlson and Currier silk thread Nos. "ooo," "oo," "o" and "A." By the correct use of such thread the tooth may be so ligated as to be held absolutely firm in its place, while the ligatures occupy so small a space that they will not act as irritants. Properly applied these ligatures will last from one to eight weeks.

**Reports of Cases  
from  
Practice.**

There has been doubt expressed in regard to the advisability of performing the operation of implantation in cases of syphilitic diathesis. I have demonstrated before the Stomatological Club that in cases of syphilis where the teeth have been lost through the disease itself and the specific treatment employed, implantation may be and is successful.

In August, 1895, Mr. S., a patient under treatment for secondary syphilis, came to me. The right lateral incisor had loosened and dropped out. The crown of the tooth was intact, so I removed it and attached it



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to a healthy alien root. An artificial alveolus having been prepared the tooth was successfully planted, and is in perfectly healthy condition at the present time.

In the latter part of the same year a man suffering from syphilitic ulcer of the tibia, and being under medical treatment, lost the two inferior central incisors. I implanted two new teeth, and a letter received from him a few weeks ago informed me that they were the "best teeth in his mouth."

On March 2, 1897, at a clinic of the Stomatological Club, I implanted the root of a right lateral incisor in a syphilitic subject for the attachment of an artificial crown. At this date the tooth is a solid and useful member.

These cases, I think, demonstrate the fact that this unfortunate physical condition does not exclude the patient from the advantages of this operation.

Numerous cases have also demonstrated that pregnancy is not a bar to the successful implantation. Of course, in all operations during pregnancy, care must be taken not to produce nervous shock, but this operation is so painless that the careful operator need never shrink from performing it upon a pregnant patient.

In January, 1897, Mrs. M., a woman of exceedingly nervous temperament, who had fallen into the hands of the Philistines and had had all of the superior teeth between the first molars extracted, presented herself for insertion of bridge-work to fill this awful hiatus. I informed her that it would be necessary to implant two roots in the places of the late lamented cuspids. Although she had been *enciente* for more than three months, she insisted upon my performing the operations. I implanted a root on the right side, and on the following day she returned and insisted that the second root should be inserted. I performed that operation also, and in due course of time the bridge-work was attached. The lady suffered no unpleasant consequences from the operations, and is delighted that she has been able to banish her much-hated plate.

And right here let me assert that the use of implantation in conjunction with bridge-work demonstrates more than anything else the stability of teeth so inserted. I know of many cases of from one to six years' standing in which implanted roots have been used to sustain bridges, especially in cases where the bicuspid and molars have been lost and a root has been implanted in the position of the molar to sustain a bridge attached to the cuspid.

I will cite but one case in which implantation was used in orthodontia. It was the mouth of a Mr. S., whose incisors protruded to such an extent that not only was his appearance disfigured, but his articulation was

greatly impaired. Dr. Younger, with my assistance, extracted the four incisors, made artificial sockets, and implanted the teeth in their normal position.

In the treatment of pyorrhœa in its advanced stages, it becomes necessary to implant and replant teeth, and this, as I have indicated previously, is where the two operations merge one into the other.

One of the most wonderful phenomena in connection with implantation is found in the fact that the implanted tooth assumes the color of the adjoining teeth, so that it is impossible to distinguish the implanted tooth from those that are "to the manor born."

I might cite many other cases, but I fear that I have already trespassed too much upon the valuable time of the Congress. In conclusion, I will say that I think the history of this operation entitles it to a permanent place of honor among the great discoveries in our profession. That it is a blessing to many patients cannot be denied. One patient who had lost an implanted tooth after five years' of usefulness, had worn a plate for one year, and then came for a second operation of implantation, remarked that he would rather have an implanted tooth, even if the operation were necessary every two years, than to be subjected to the thralldom of a plate. He but voiced the sentiment of thousands. As Dr. Louis Ottofy, of Chicago, says of this operation:

"No operation of the dentist so nearly reproduces nature as that of an implanted tooth, and the result, when successful, in appearance and comfort cannot be excelled by any other operation within the domain of the entire science of dentistry."

To such sentiments I most heartily subscribe and add the expression of a hope that this splendid operation may grow in favor among members of our profession; that they may steadily increase their discoveries and knowledge concerning it, and spread its practice more and more as a blessed boon to humanity.

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## Bad Habits.

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By FRANK C. PAGUE, D.D.S., San Francisco, Cal.

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*Read before the Pacific Coast Dental Congress. Reported by Clyde Payne, D.D.S., San Francisco.*

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So many incidents constantly impress me as bad habits in dentists, the supposed gentlemanly, courteous, refined dentists of to-day, that a paper cannot come amiss at this time, when we are turning out of our

dental schools hundreds of young men with the degree of D.D.S. who are to go forth into the world to buffet with the tide of adversity and become the dentists of their day, each striving to rise to the highest aspiration of his ambition on leaving college.

How many of these young, ambitious and qualified practitioners are successful?

Why are some successful, while others apparently more promising, more proficient, fall by the wayside? Many either pass out of the profession, which, but for their bad habits, they might have honored, or fall in the ranks to the level of the veritable quack?

Foremost in the category of bad habits is that of the use of intoxicating liquors, the curse of mankind when taken to excess, the stimulant that excites the brain to quick thought and witty action, which loosens the tongue of the reserved and bashful.

**Evils of  
Intoxicating Liquors.**

If a person is disposed to a social drink, let it be taken after business hours, when he has left his office for the day, and is sure not to come in contact with a patient who can readily discern the odor on his breath, if not in act or manner; but beware of the repeated or regular drink, for it will soon leave its impress, noticeable in the trembling hand or nervous manner, and the uncertain or irregular hours at his office.

Just such an instance occurs to me now. A young man, unusually successful, who in a few years built up by his own efforts a lucrative practice, not so much through his ability as a perfect operator, as through his genial, cordial disposition and business sagacity; yet he fell into the habit of meeting friends at his noonday lunch, who would suggest a drink, and then a return of the courtesy, until he had forgotten office, waiting patients and business, and would not return to his office again that day; the morrow brought its customary indisposition, with more excuses to patients, until through continued shortcomings on his part his practice slowly but surely slipped from him, never more to return, and yet apparently he was not conscious of any flagrant act that should cause such a change in the tide of his prosperity until it had carried him beyond his depth, so that he could no longer recover his footing.

But there is another bad habit, to me even more obnoxious than that of drink. The damnable cigarette, that is destroying the intellect and killing the young life of the many addicted to their use.

**Evils of  
Cigarette Habit.**

Look about you my hearers, fellows, friends. How many within the hearing of my voice smoke the cursed weed? I can detect the odor of the vile stuff on the clothes and breath of even an occasional smoker, as I sit beside him on the car or pass him in the street, and if to my acute

sense under such circumstances the odor is so noticeable, how much more so must it be to the patient into whose mouth often, unwashed fingers are thoughtlessly placed, after handling the cigarette, to say nothing of the odor of the breath and scented clothing. Patients have told me that they left Dr. Blank because he was so addicted to the habit he would excuse himself from the chair to step into a secluded spot for a puff, and then return and indifferently or unconsciously, continue the operation, without so much as bathing his fingers or perfuming his contaminated clothing.

This habit has grown to such proportions among our young men of the present generation that we find it the rule rather than the exception. A few evenings ago, while seated at a refreshment table with a few professional friends, among whom were several recent graduates, I was amazed to see one of these young men take from his pocket a package of cigarettes, and light one while he passed the package to the others, each young hopeful taking one, and familiarly toying with it as he lighted and inhaled its deadly fumes.

A shudder passed through my frame as I saw their act and thought of their future. I could not help commenting on their indiscretion, and each of them flushed as he dropped his cigarette on the floor. But I had the pleasure of seeing that my words had left their impress, for the one who had treated his companions openly declared he would never smoke another cigarette, while he crushed the package under foot.

Then there are other bad habits that impress our patients unfavorably, habits that grow through carelessness in not keeping our offices tidy and attractive, and ourselves neat in appearance.

In the office of one with whom I am intimate, the carpets have been taken from the floors and thoroughly cleaned but once in six years; the curtains at the windows are so soiled from dust and handling that they are ready to drop from their hangings; the furniture is soiled and worn; while in the inner office I have seen patients look askance at the soiled napkin covering the head rest of the operating chair, and before they would place their head on the rest have removed the napkin, when the doctor's head was turned, and thrown it into a corner, while he was all oblivious of the bad impression his thoughtlessness had caused.

I know of dentists so taken up with other affairs that they will place a patient in the chair and go into the outer office to see some caller about business, other than their profession, and sit and talk for a half hour or longer until the patient, becoming disgusted, would leave the chair declaring their intention of seeking other service.

**Management  
of Patients.**

And now a word as to the successful handling of one's patients. Recently a lady consulted me regarding a fistulous opening on her gum; the parts were very inflamed, swollen, and sore to the touch, and upon pressure pus oozed from the opening. I learned by inquiry that her dentist had extracted a second inferior molar some six months previously, but further questioning failed to reveal any knowledge of the condition of the tooth extracted. She had not seen the tooth; he had simply told her it was out and the parts would heal soon. For days afterward she suffered far more than before the extraction, and finally returned to him with her face greatly swollen. He applied some counter-irritant and suggested some local treatment, getting rid of her as soon as possible. The swelling subsided in time, and then appeared this opening, from which she said she could always detect a bad odor. My diagnosis was a broken root. The lady was of highly nervous temperament, and it took some minutes to gain her confidence, so that I could inject, hypodermically, a local anæsthetic, and then I readily removed the offending member. I endeavored to excuse her dentist's act by suggestions as to how it was possible for such mistakes to happen, but she was not convinced, and to-day she is one of my staunchest friends, and I have her entire family as patients.

I consider it bad practice to deceive a patient at any time, or under any circumstances. My first step is to gain my patient's confidence, and that confidence I treasure above all else. I stop to reason with them, and have them understand me, and then I am able to accomplish results that I could attain in no other way. Take the child of nervous temperament who has heard the dentist discussed at the family table, and the impression he had gained of him being one of fear and horror, a monster ready to kill and devour. When brought to us it is with fear and trembling that he takes a seat in the operating chair; he wants to see everything, and to know if each instrument placed in his tooth will hurt. The parent may say to you confidentially, aside, "Doctor, just pull the tooth when he least expects it; that is the only way you can get it out." My usual reply is a rebuff, for what child will not bear the impress of such an act for years to come. I talk to the child kindly but firmly, and in a few minutes am able to operate.

I believe it bad policy to try to bribe our little patients. A whining, fretful, spoiled boy of twelve years came under my care recently. I had wasted the better part of an hour coaxing and trying to make some progress in preparing two or three cavities for filling, but with every attempt, at the use of the excavator, he would set up a howl, until patience had ceased to be a virtue. The mother was sitting near by ap-

parently oblivious of all my trials, until I spoke harshly, when she stepped to the side of the chair, saying, as she stroked his hair, "Be good, Roy, it will soon be over, and then I'll buy you something nice." He turned and struck at her, saying, "Get out of here!" I instantly realized that it was time for me to act. I was so indignant that I spoke sharply to him, saying, "Now you behave yourself, or there will be trouble." He was crying at the time in a whining way, but as I spoke he looked up into my face and said, "What will you give me if I be good?" I said, "I will take you into that back room and give you the worst thrashing you ever had if you don't behave." He had sense enough to know that I was in earnest, for he settled back in the chair and never uttered a sound until I had finished, and I was not at all careful, either, as to whether I hurt him or not, but to-day that boy is one of the best behaved patients I have, and his mother has told me it was the first time he was ever controlled, for she could do nothing with him unless by promising to humor some fancy.

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### **Necessity for General Education in Dental Prophylaxis.**

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By FRANK L. PLATT, D.D.S., San Francisco, Cal.

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*Read before the Pacific Coast Dental Congress. Reported by Clyde Payne, D.D.S., San Francisco.*

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Every intelligent, thoughtful practitioner of dentistry probably at some time in the course of his experience asks himself the questions: Why do so many teeth decay? Why are so many teeth lost? Why do so many of our operations fail?

In spite of all that has been written, said and taught, in relation to the shaping of cavities, preparation of enamel margins, selection, manipulation and introduction of filling materials, and the shape of fillings themselves, our operations fail year after year, and thousands of teeth are lost that were supposed to be permanently filled and saved.

That there must be some direct or indirect cause for this deplorable loss of tooth structure, with its accompanying suffering and facial disfigurement, is patent to all of us; and it seems to me that there are two common causes that go hand in hand, and are almost wholly responsible for the evils mentioned; they are the prevailing ignorance of the general public in regard to the value, care and preservation of the teeth, both deciduous and permanent, and the neglect that follows ignorance as inevitably as night follows day. There is at present a general and very

laudable tendency toward athletic sports, out-door exercises and physical training, that can be commended to every friend of the human race. Our so-called humorous writers may caricature and ridicule the athletic girl, the football hero, and some pessimist may claim that college sports interfere with literary attainments of our college men; but the fact remains that on the physical development of the youth of to-day depends the physical and mental vigor of the future generations.

There is also much being done at present toward emphasizing the importance of preserving the teeth as essential parts of our anatomy, as is being demonstrated by the present unprecedented demand for the services of well trained and skillful dentists. But with all that is being done, there exists in the minds of the masses an ignorance of the value of the teeth, and of means for their preservation, as dense as it is deplorable, and as pitiful as it is destructive. Why is it that we meet to-day so many cases of gastritis, stomatitis, alveolar abscess and pyorrhea? Why do we see so many dyspeptics, so many nervous, irritable children? So many children of a low order of physical and mental vigor? Truly, I believe because the teeth are neglected. Foods improperly masticated cause all dental diseases. Another evil is the indiscriminate extraction of teeth—because that operation, in the public mind, seems to be the easiest way to secure relief from dental ills, though it may invite a thousand others previously unknown. If the people could be taught that their teeth stand guard at the entrance of the alimentary canal, to seize and properly prepare for digestion and assimilation every particle of solid food taken into the system; that without this preparation no perfect nutrition can be possible, and that this preparation of the food depends upon the possession of reasonably perfect dental organs, much good would be accomplished, and would naturally be followed by the adoption of means to preserve the teeth and so promote the general mental and physical development of man. When we contemplate the suffering of children, and see all the ills of mal-nutrition, due in a large measure to the premature decay and loss of the deciduous teeth; when we have babes only two or three years old, brought to our office, suffering from alveolar abscess, and present for examination, perhaps, only a row of little discolored stumps projecting from the inflamed and swollen gums; when we examine patients from eight to twelve years of age and find the incisor teeth stained and carious, and the first molars only yawning cavities of decay; when we see all these evidences, and realize that most of them could have been prevented, does it not emphasize in the most emphatic manner the ignorance of the parents of our young patients and the need of general education in dental prophylaxis?

**Causes  
and Prevention  
of Caries.**

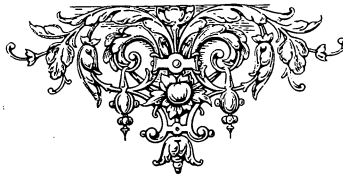
It is now pretty well established that outside of imperfections in development and structure, micro-organisms are the cause of decay in the teeth. It is also a well established fact, demonstrated by the experience of Lister, Miller, Pasteur, that the destructive action of bacteria can be checked, and the bacteria themselves destroyed by the use of suitable antiseptics. In recognition of this fact, the market is being flooded just now with all sorts of antiseptic mouth washes, all claiming to have special merits. Some of them probably possess some virtue; but how many of us are recommending them? How many of our patients use them conscientiously? Only a small minority of the thousands who should be deriving benefit from their use. I think the broad statement may safely be made, that *if the teeth could be at all times kept antiseptically cleansed none of them would decay*. Such a condition, unfortunately, cannot be maintained; but the nearer we approach it, the more nearly perfect will our teeth remain. The great majority of our patients know nothing at all about antisepsis; and most of them do not even clean their teeth thoroughly. We all have patients who insist that they are using the tooth brush regularly twice a day; and judging from the appearance of their teeth and gums anterior to the first bicuspid, we may easily believe their statements, but the molars and bicuspids frequently give no evidence of contact with the brush, particularly on their masticating and buccal surfaces, and certainly are strangers to the exhibition of dental floss. We can, all of us, enumerate case after case where good dental work has failed, not only from defects in material manipulation, but simply because when the pain was stopped, and the visit to the dentist ended, the teeth were left to practically take care of themselves; to receive attention only when the discomfort due to neglect, exceeded—in the patient's mind—the discomforts of the dental chair. How few of our patients pay us regular visits? How many come to us just as seldom as possible?

It is unnecessary to say that these habits are wrong and need correction; that all know it, and most of us try to teach it, but, it must be admitted, with indifferent success. The importance of the subject, however, should spur us on from day to day to repeated and long continued efforts; we should exhaust every means in our power to educate our patients, trying to impress on their minds the necessity for tooth preservation by prophylactic means, and also the ease with which means can be employed. Every medical college and school for nurses should have, as an important and unavoidable part of its curriculum, a good course of lectures on dental anatomy, pathology and therapeutics; and these subjects should form an important part in studies pursued in our public and



normal schools, and should receive their full share of attention from all teachers' associations and conventions.

Now, if an excuse or apology is needed for presenting this paper to the congress, it lies alone in the importance of its subject. Implantation and bridge-work, abscess and antral trouble, fillings and filling material, all should receive the share of attention their importance demands. But the fundamental cause for their existence depends on dental diseases, and dental diseases, in a great majority of cases, is a result of ignorance and neglect. There is a crying need for general education in dental Prophylaxis; and the fact should be impressed upon every mind, that "An ounce of prevention is worth a pound of cure," and that good, sound, useful teeth, unmarred by crown or filling, represent the ultimate end and aim of the best dental instruction and achievement of the present century.





## New Jersey State Dental Society.—Twenty-seventh Annual Meeting.

### Discussion of Papers on Root Canals.

At the evening session, July 21, the program included a "Symposium on Root Canals," several essayists reading short papers. The general discussion of the subject was opened by Dr. C. N. Peirce, of Philadelphia.

The individuality of the dental practitioner is not more emphasized in any one operation, than it is in his appreciation of the protection to be secured to the tissues occupying the apical space and adhering to the cementum of the root, or of the restoration of these tissues to health when they have been thrown into an abnormal condition by the product of a devitalized and decomposing pulp. Addressing our thoughts first to the condition where the pulp has been but recently devitalized, and this accomplished by the usual agent, arsenic in some form; the future comfort of the root depends of course upon the healthy and stable condition of the tissues surrounding it, this depending upon the thoroughness and promptness with which the devitalization has been accomplished.

Let us first devote a few moments to pulp devitalization. The active agent being arsenic, the necessity for its being well secured in contact with the pulp need not be dwelt upon, for every one is thoroughly familiar with the importance of this initiative procedure. The length of time the application shall remain varies with the necessities of the case; suffice it to state that, all preliminary steps having been properly performed, several days (three or four are better than a less time) should elapse before the effort is made to remove it, for we not only have to devitalize the body of the pulp, but the prolongations entering into the root canals, as well as the tubuli of the dentine; these must be so affected that they readily

loosen their hold upon the walls of the dentine of the chamber and canal, so that when this vascular organ, the pulp, is removed no shreds or dislodged portions should be left clinging to the dentine.

One matter that was mentioned to-day I consider of very great importance; that is, before the effort is made to remove the pulp from the canal or from the body of the pulp cavity, it is well to saturate it with 50 per cent. sulphuric acid. This adds very greatly to the ease and efficiency of the removal; it hardens the pulp, toughens it, sulphuric acid being an astringent, and you would be surprised after an application of sulphuric acid, to see how easily the broach removes it, not only from the body of the chamber, but also from the canals extending into the roots.

Let us not overlook the fact that all of the periphery of the chamber and the root canal must be protected by the very best antiseptics. To do this apply zinc chloride solution, or heat, so that in the future we shall not have from the walls of the dentine decomposition and its product to contend with.

I speak now of simple cases, where the pulp has been removed, and to protect the walls from any material that may subsequently be deposited, we need to saturate with a thorough antiseptic, and there is nothing better than zinc chloride. Saturating the pulp canal with a strong solution of zinc chloride is certainly one of the best protections against subsequent trouble that we can employ. We must remember that in devitalizing a pulp we devitalize not only that organ, but we devitalize the organic matter of the dentine that lies in the pulp chamber, so that those of you who have removed fillings of gold from pulp canals have been surprised oftentimes to find there an offensive odor. That odor does not necessarily come from the fact that the pulp is not all removed, but from the fact that the organic matter in the dentine, lining the pulp chamber, has been devitalized, and, not having been saturated with an antiseptic, it becomes disorganized to a certain extent and gives out a very offensive odor. There is an advantage gained in saturating the cavity with zinc chloride, and a very great advantage it is. Another remedy may be used for the same purpose, that is heat, which is quite as efficient. Hot air, used persistently for a few moments in a tooth from which the pulp has been removed, or else an instrument, as a broach tapered so that it can be introduced into the canal towards the apical end, heated to a white heat and thrust in rapidly until you cease to hear the hissing sound caused by the moisture, you will find quite equal to an antiseptic. It is astonishing what an influence it exerts upon the tissue to prevent trouble, and I think it quite as good as any antiseptic that may be employed.

**Chloride of Zinc  
after Pulp Removal.**

**Treatment of  
Canals Having  
Putrescent Pulp.**

This having been performed satisfactorily, the cases from which we have subsequent trouble are very rare indeed. Unfortunately, however, there is another class of cases, in which the tissues outside of the root—involving those of the apical space as well as those covering the whole of the root—are involved in an inflammatory action, resulting in exudation from the vessels. This very naturally occurs in those cases where the pulp, instead of awaiting the interference of the operator for its devitalization, has, for some reason, constitutional or otherwise, succumbed, without an opening into the pulp chamber or the canal for the exit of the product resulting from the inflammatory or decomposing stages. As a result of this, one of two conditions invariably follows, viz.: an acute abscess terminating with a fistula, or a chronic condition recognized as a blind abscess, so called from having no opening for the exit of the decomposing products. In the former case enlargement of the root canals with sulphuric acid and a well barbed broach is quite essential to the success of subsequent treatment, which is simply complete sterilization with an agent both antiseptic and escharotic, so that the tissues in the apical space shall have their secreting surfaces not only sterilized, but so cauterized as to result in healthy granulations and effectually preclude the possibility of an accumulation of dead or waste material. This is not infrequently accomplished by forcing through the root and out of the fistulous opening carbolic acid or wood creosote. Where these are slow to act the result may be secured by an application of zinc chloride solution. This attained, the subsequent work is simple; filling the apical end of the root with cotton saturated with wood creosote, and the larger canal and crown with such material as may be desired.

**Cotton as  
a Root Filling.**

The discussion to-day indicated the value of a cotton filling. I have no objection to that; if the canals are thoroughly prepared I would fill with a pledget of cotton at the apex, after thoroughly sterilizing and saturating with wood creosote, packing the cotton from the apex until the canal is full, then filling the crown as may be desired with another material. You need not fear any trouble from a root filled in that way. There was a supposition that cotton might absorb some organic matter, and thereby become offensive. I have yet to take out a cotton filling from the root of a tooth that was offensive, where care had been taken to saturate the cotton with wood creosote and to pack it firmly into the root, and provided the condition that I have intimated had been secured. I remember a patient who had a tooth broken, the root of which had been filled in that way 30 years before by my friend Dr. Flagg, from

the apex to the neck of the tooth; I took out the cotton filling and it was as pure and sweet as any root canal you could find. That cotton had been treated with an antiseptic creosote, which was used at that time, and not with carbolic acid. Creosote is preferable to carbolic acid for saturating the root canals of teeth.

**Abscesses  
Without Fistula.**

The second class of cases, where the pulp has died without the establishment of a fistulous opening, are not so readily treated, nor are they so secure from subsequent inflammatory stages even after the trouble has subsided and normal comfort been established. Not infrequently the very act of opening into the pulp chamber and canal excites a degree of inflammation which, if not arrested promptly, extends so as to alarm both patient and operator. To prevent this most unfortunate condition every effort should be made; so, after the essential primary step of opening well into the pulp chamber and canals, enlarging perceptibly with a solution of sulphuric acid, there should be thorough sterilizing with zinc chloride solution, or some other equally good antiseptic, followed by the application of heat. Hot air, applied by means of a syringe, or a long tapering broach, heated to a white heat and thrust frequently into the canals until dessication has been thoroughly accomplished, is of all other methods attended with the best results. Most frequently have I had the opportunity of trying this latter plan, not only on my own patients, but patients of other operators who had become discouraged in their frequent and prolonged efforts to secure a comfortable tooth with a permanent filling placed therein. The origin of the use of heat and the treatment of these difficult and troublesome cases must certainly be credited to Doctor Register, of Philadelphia, he being among the first, if not the very first, to successfully use it for the purpose indicated.

There are cases where we have a thickened tissue, and oftentimes in these cases a discharge from the thickened tissue around the end of the root until it is sufficient in quantity to pass up through the apical foramen into the body of the tooth. There are cases, where the opening is not large enough to admit of fluids passing through, but there are others where we have an accumulation around the end of the root, and this accumulation is forced up through the apical foramen into the tooth. In those cases we have two methods of procedure; the introduction of chloride of zinc will usually be successful; if it is not, hot air or a hot instrument will be successful in giving relief.

Dr. Smith to-day spoke of the inability of the tissues outside of the root to produce any unfavorable condition in the root. I think the Doctor overlooked the fact that whenever a pulp is destroyed we have a disturbed circulation in the pericemental membrane, accompanied by

hyper-nutrition; it is very rarely that we can devitalize a pulp without producing, to a greater or less extent, ex-cementitis. We must recognize the fact that there is always a free disposition to irritation because of hyper-nutrition in the pericemental membrane after the devitalization of the pulp in a tooth; the same vessels that carry the blood to the pulp carry it also to the pericemental membrane, and when we destroy that portion of the blood vessels in the root the blood supply is diverted to the membrane, which results in hyper-nutrition and ex-cementitis; consequently a tooth the pulp of which has been devitalized, is always predisposed to irritation, and oftentimes there is severe disturbance. Now, having that condition, we oftentimes have, when the apical foramen of the tooth is large and the apical end has not been well protected, some circulation through the apical foramen up into the canal of the tooth. I don't think it often occurs, yet it does some time occur.

I present the society with two very fine photographs, not as a part of the symposium on the treatment of root canals, but as an illustration of the changes which early take place in the pulp when any portion of its natural protector, the enamel, is lost.

The photographs are taken from schematic drawings on prepared cloth, used as teaching charts. No. 1 is illustrative of the pulp, odontoblastic layer, fibrillæ, cementum and enamel, and is meant simply as a reference. No. 2 is a faithful drawing of a slide made from a cuspid tooth. The section was unstained, the color shown in the dentine being as it appeared under the microscope.

The object in presenting this, is to remind you anew of the changes which begin so early in the pulp when its environments are changed.

It may prompt you as it has me, to renew my efforts to detect and correct, if possible, all conditions which this and other slides show to be precursors of changes in the pulp which may result disastrously.

You will observe that there is no loss of dentine at either point; the history of the tooth is unknown.

I propose to occupy a few minutes in demonstrating to you a method which was alluded to by our friend, Dr. B. Holly Smith, as being probably the better way—and we all want to find the better way—of utilizing cotton canal fillings. First and foremost I would like to say, in reply to one or two remarks of my friend, that I don't think it is exactly right to quote imperfectly performed operations, as evidence of the impropriety of doing a certain kind of operation. It is no argument to say that because a man mounts a bicycle and immediately falls and breaks his neck, therefore the bicycle is not a good thing to ride on.

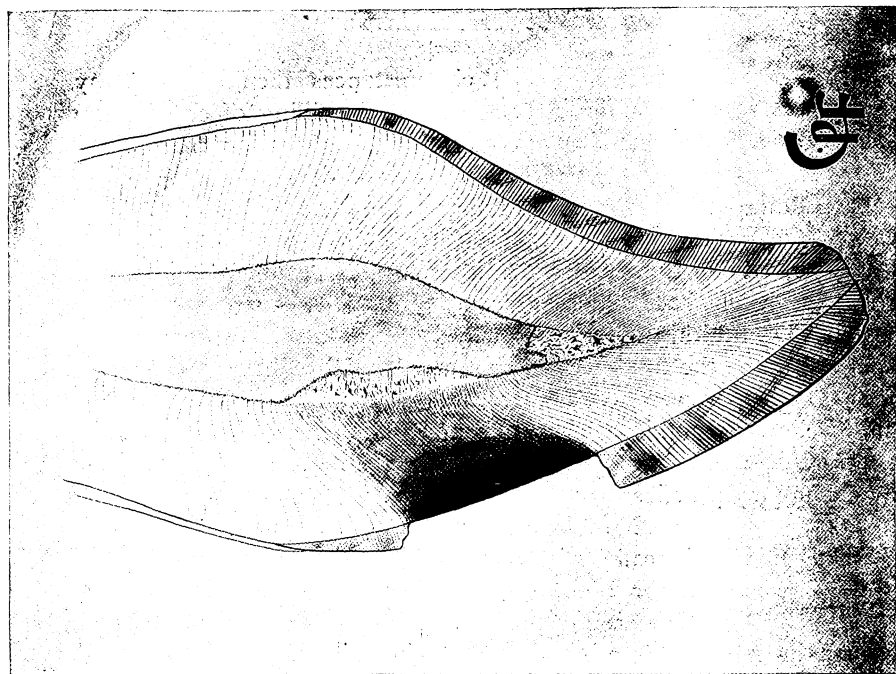


FIG. 2.

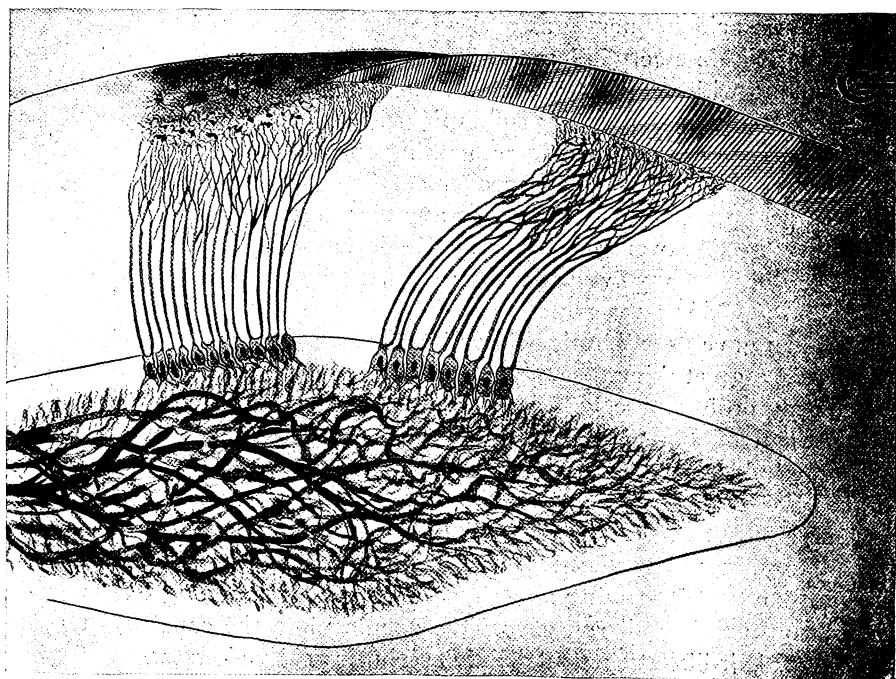


FIG. 1.

**Cotton in  
Filling Canals.**

Under such circumstances then, I would say again that I have taught the filling of canals with taper twists of cotton because of the fact that for the many years I have been doing that sort of work and have been doing it with very satisfactory results to my patients and to myself.

It is because of those results, and analogous results in connection with treating teeth, that I have taught my boys to fill canals with cotton. Our friend, Dr. Smith, to-day asked why I did not teach the boys to use nitrate of silver in the treatment of root canals. Now, I could not teach them to do that; I never have filled a canal with nitrate of silver. If Dr. Smith, twenty-five or thirty years from now, tells me that he fills canals with nitrate of silver, I shall say, bully for you, Dr. Smith; and, perhaps, I may change my practice then, but not to-day.

**Sulphuric Acid  
in Canal Cleansing.**

Now, one word about the use of sulphuric acid. I really wish Dr. Ottolengui was here, because I never like to say anything about my friends when they are not present. Dr. Ottolengui contributed an article to a little journal in a Western State, in which he wrote about this sulphuric acid business, applying sulphuric acid to the canals and then cleaning them out with Donaldson cleansers. He said that he had been using sulphuric acid frequently as a cleanser of canals, applying it two or three times within a certain length of time. I have not had the opportunity of talking with my friend since that time, but I could not rest until I had tested what was claimed for sulphuric acid and water, and I found that it cleansed the canals better than anything else.

I know of but one step of improvement in connection with canal filling, whether in medication, filling, or anything connected with canal work, during the last twenty-five years. We do canal work to-day precisely as we did it twenty-five years ago; we devitalize the pulp just the same, we extract it just the same as we did twenty-five years ago; but when Callahan gave us sulphuric acid and water as a means of cleansing canals, he did a great thing.

I take my probe and sulphuric acid and go in. I repeat it, then use bi-carbonate of soda solution and then wash out with warm water. I have a probe holder, such as you can get from the S. S. White Company; my probes are made of platinum gold wire. We have three sizes, the finest being almost as delicate as a hair. First you take a Talbot reamer, on a spiral spring, and you turn it, this way, back and forward, gently; there is no danger of breaking anything off or getting anything left in the canal; you turn it until you get a little opening into the canal; then you take your hair-like probe and a little sulphuric acid and water.



You must never twist the broach in the canal. Work it straight up and down, using sulphuric acid and water, getting the probe in a little further and a little further until you recognize that it is just about as far as you would like to go.

**Management of  
Cotton in  
Root Filling.**

Now, I ask you, what are you going to fill that canal with? You have got it nicely washed out, thoroughly cleansed. I would like to see you take anything—I care not what! and pass it down that canal and stop the foramen and hermetically seal it; I would like to see you do it. For me it is simply an utter and absolute impossibility. I cannot do it. I fill those canals, according to their size, with inspissated medicaments. Having dried the cavity with bibulous paper, and I see no objection to hot air for that purpose; having dried the cavity with bibulous paper as nicely as possible, I take some oil of cloves and morphia paste and pump it down into the canal and cover with temporary stopping. It will stay in place and answer the purpose for years. Then, in the larger canals we use raw cotton. Why? I would like to ask you gentlemen who use absorbent cotton if you ever wedged absorbent cotton between two teeth and did not recognize the fact that absorbent cotton is rigid? But you can take raw cotton, natural cotton, and put that in, wedge it in between the teeth as solid as a reasonably good gold filling. That is one difference between natural cotton and absorbent cotton. The next difference is that natural cotton packs like soft foil; you can carry it in on the probe clear to the end of the canal, until you find you have just reached the apical foramen.

In some root canals you can use a taper twist of cotton for filling. Our friend Dr. Smith referred, this afternoon, to a case of the removal of a cotton filling that was not sweet. That may be due to the fact that they did not half cleanse the pulp cavity.

Take a piece of natural cotton and take a fibre from the end and draw it out, moistening it with a little sterilized water; gradually draw it out into a taper twist, getting it a little larger and larger as you come to the end, until you have a taper: it is delicately shaped; it has an insuperable objection, that little fibre on the top, waving backward and forward, so you take the scissors, and clip it off. Then you cut off the other end, and you have your taper twist of cotton. Next take a pair of pliers with long, delicate jaws, and take up the taper twist and dip it into a bottle of medicament, thoroughly saturating it with oil of cinnamon or oil of cloves, and lay it on the edge of the bottle; then take the taper end of the taper twist and put that taper end deftly into the opening of your canal. Having entered the canal, take a proper canal filler and pass it in gently, until you have reached the upper part of the canal; then draw

your instrument a little out, and gather up the next part, and the next, not taking the instrument out of the canal, but drawing it out a very little way, until finally your cotton has gone all the way into the canal nicely. If you feel that it has been clogged, draw it all out and do it over again; if it goes in nicely continue until you have the canal all packed with cotton, saturated with oil of cloves or oil of cinnamon. Then take a little pellet of cotton and place it in the mouth of the canal. What for? For a guard. It takes up the superfluous medicament and guards against *sudden* future removal, if needed. Then cover that with "temporary stopping," because temporary stopping does not leak. When you have to take it out, on account of peridental irritation, work the instrument gently and carefully, not pulling out the cotton suddenly.

Now, what is the difference between natural cotton and absorbent cotton? Suppose you were to take a bale of absorbent cotton and throw it overboard and let it float around the docks for a week, what condition would that cotton be in, do you suppose? But we know that bales of cotton, raw cotton, have been thrown overboard from vessels, properly packed bales of natural cotton, and they have floated around in the sea for weeks or months or years, and then have been picked up and examined, and I was told by a sea captain of New Orleans that he did not believe that bales of cotton so floating around for months would be wet and injured one inch from the surface. Said he, "Doctor, I don't believe the water goes in over a quarter of an inch." That is the difference between natural cotton and absorbent cotton. Now, when you fill with cotton a canal having a large foramen there will be a little infiltration, and that infiltration may be taken up by the cotton, and in the course of time give trouble. In a case of such a large opening at the end of the canal we have to fix a small pellet of temporary stopping on the end of the taper twist of cotton, warm it and carry it up to the apical foramen, pressing it firmly, but gently, into position.

The underlying principle in the treatment of  
**Dr. D. H. Jones.** root canals and the filling of them is cleanliness, disinfection, freedom from septic influences. I take all the pains I can to get the canal clean, and I am especially careful with regard to the apex. I am very careful not to go through the foramen, but I want to go pretty nearly through. In choosing a disinfectant you need something that is germicidal. I remember an article by Dr. Black in which he said that although theoretically coagulents may be a bad thing, yet clinically we have found excellent results with them. So in the selection of a disinfectant. A few years ago I used an essential oil, oil of cinnamon or oil of cloves, hoping the organic matter would in that way go through a process of tanning. Now I do not use that treatment except

in exceedingly obstinate cases, where I fail to get good results from other treatment. My disinfectant is hydrochloric acid, full strength. I hope with that to obtain thorough cleanliness. I sometimes use sulphuric acid, after which I wash out with hydrochloric acid after neutralizing the sulphuric acid with common baking soda. With that treatment the clinical results in my practice for a short time have been very beautiful and very satisfactory.

Following the line of surgical operations, I avoid changing dressings, if possible. I put eucalyptus oil and gutta percha up to the apex of the root, then follow that with more gutta percha down the canal, sometimes filling the entire canal and sometimes a part of it, depending largely upon conditions. Then I wait, leaving the rest of the cavity open, and if inflammation follows, as it sometimes does, I can remove the canal filling and give the patient relief. Then I wait a little while and try it again.

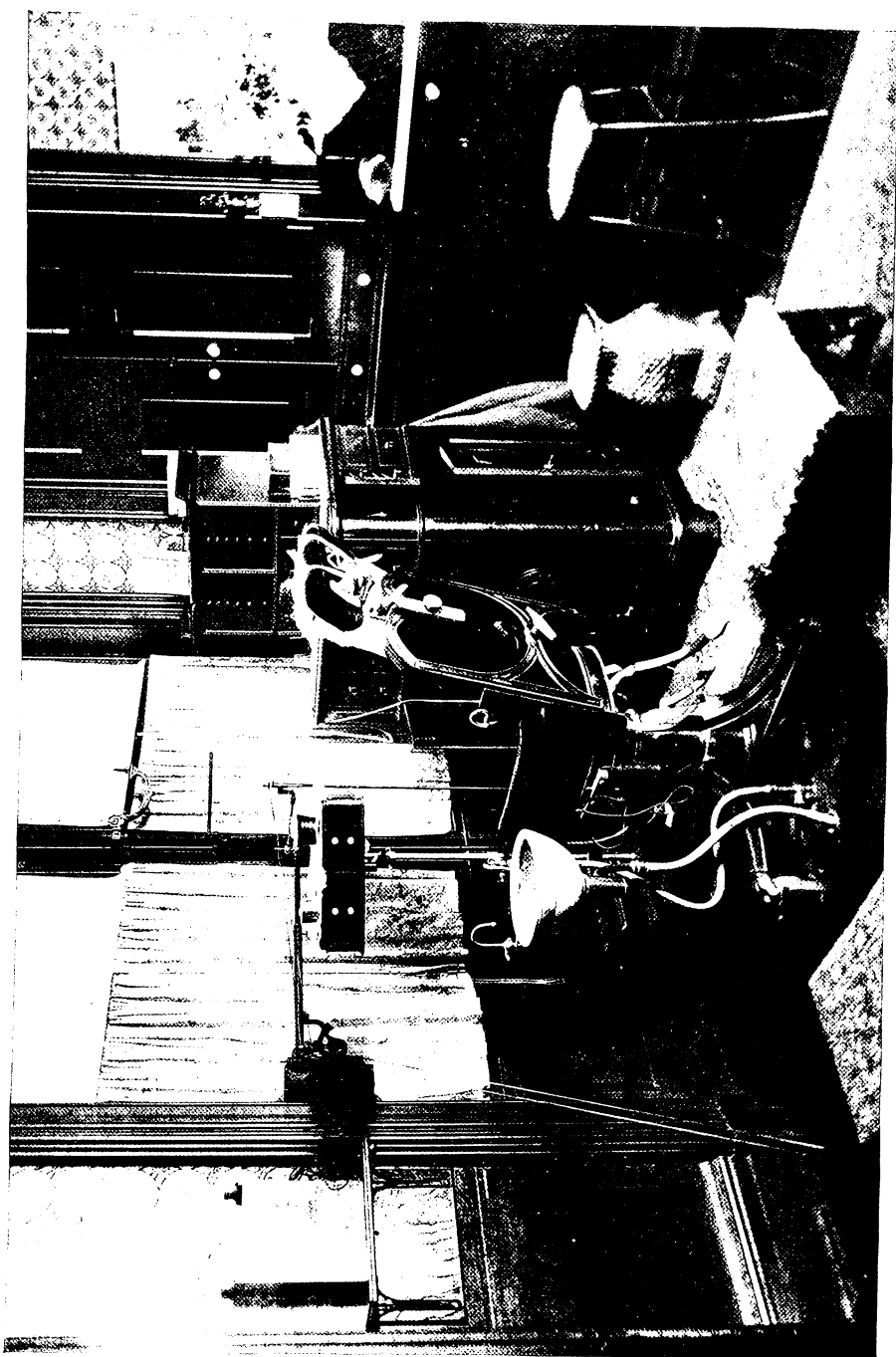
I feel like entering a protest against the extension of the territory where cotton is king. I feel like saying to my friend, Dr. Flagg, that I believe there are hopeful indications that the dental profession will develop men of science and skill who will reach out beyond this cotton field, and this cotton treatment. Our late lamented lecturer, John B. Gough, once said, when asked what was the saddest thing he had ever witnessed, that the saddest picture that he had ever seen was an old face on a child; and I want to say that it provokes a sadness in my reflections when I recall the fact that our youthful friend, Dr. Flagg, is propagating and preaching an antiquated doctrine.

**Cotton Fillings  
Denounced.**

I don't believe that it is fair or right that we should deny the possibility of the development of a more scientific treatment, to the young men who are coming into the profession. I believe that Dr. Flagg himself has claimed, and it is claimed repeatedly for cotton, that it is the easiest root filling to remove. That is an admission that it is introduced as a temporary expedient. If we know anything of surgery, why not take advantage of methods which have been prescribed, and let those canals be filled permanently; and if trouble should arise in the future, why not resort to surgery? Are we not sufficiently dexterous, clever, skilled and educated? I think so.

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The secretary announced the appointment of the following committees: Code of Ethics, J. Allan Osmun, A. R. Eaton and R. M. Sanger; Committee to procure from Congress a statute in relation to dental patents, G. Carleton Brown, F. C. Barlow and C. S. Stockton.





## Office of Dr. Charles F. Allan.

Newburgh, N. Y.

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The model dental office must meet many requirements, the first of which in point of necessity being, a proper light.

A corner having a southern or western exposure probably supplies the best light, but, where this situation is lacking, a double or mullion window facing the south, such as is shown in the accompanying illustration, has great advantages. The two windows give a wide angle for the light to enter, the sashes in the separate windows are easier to handle than would be the sash of an immense window of the size of the two combined, and the regulation of the light by means of shades is very much simplified.

An added improvement of great value, but one seldom attained, is a partial skylight. We cannot get too much light for dark days, and for bright days, the excess of light is easily tempered and toned down to our needs.

The outfit of machinery and general mechanical paraphernalia should be as liberal as possible, taking in every device that will help us in our work, but, as much as possible, all appliances should be out of sight. We cannot have too many mechanical and scientific helps, and they must be conveniently at hand, but we should study not to have them offensively in view.

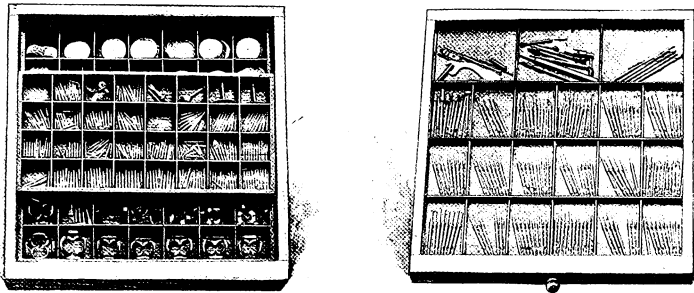
The large rheostat with its bright metal knobs, on the wall, and a multiplicity of electric bulbs, used either for light or purposes of resistance, in connection generally with numerous and complicated electrical devices, are to me forbidding, and I feel that in connection with the chair, must frequently suggest electrocution.

Electric motors, where they cannot be put under the floor, can be boxed, and a place can be found for a rheostat, if one is necessary, where it will be but little seen. In my own case I am fortunate enough to have a water motor of ample power, and of such perfect simplicity that it never gives me trouble by getting out of order.

To the left of the chair is a wall bracket, carrying cells of ample strength for all purposes of mouth illumination, and over the marble slab, at the right of the picture, is the cataphoric machine. These two pieces of apparatus are such as can be bought of all dealers in dental supplies and are not suggestive of electrical force, and comprise all I need of electrical devices at present.

Where the dentist wishes to make a permanent electrical connection between his cataphoric machine and his chair, the bolted pieces of walnut with binding posts and cords in place, at the left of the chair and immediately under the spittoon, illustrate an easy way of arranging it.

To get the most and best use of the dental engine, a motor is of course necessary; it should be out of sight, and if possible out of the operating room, thereby minimizing the noise, and doing away as well with the show of machinery. In my own case, with the desirability of



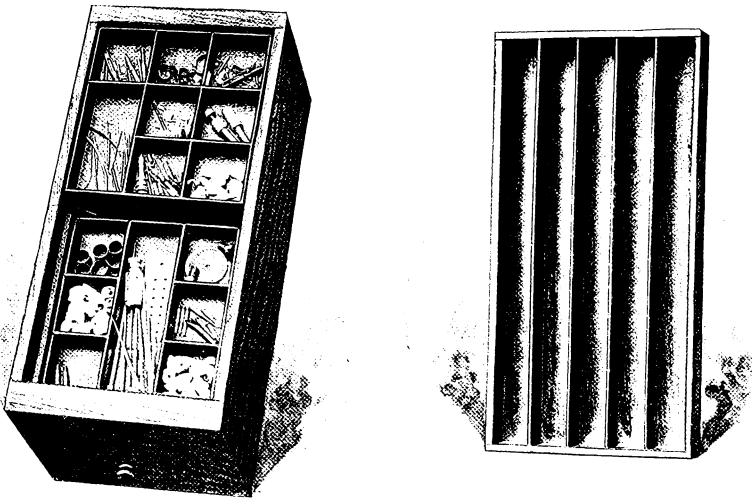
getting rid of the drudgery of working a treadle, was also added the wish to get rid of the driving wheel and standard, so as to have nothing on the floor requiring to be moved around. The engine arrangement illustrated fulfils these requirements perfectly; everything is out of the way and conveniently at hand, and in this case has been in steady use for over twenty years with no desire on my part to make a change.

A cable thus arranged will last a number of years, the one in use having outlasted several hand pieces. I turn on the water with my foot by means of the treadle shown immediately under the back of the chair, and the treadle *being eighteen inches in length*, the foot has no trouble in finding it.

The spittoon illustrated has been in use, I should think, a quarter of a century, and is original as far as I know, and I think has many advantages. A spittoon connected with a running water supply is very desir-

able on account of cleanliness, but the various patterns furnished by the dental supply people are objectionable on account of the great display of polished metal, and some of them are also objectionable by reason of their fixed position on the floor. Nickel plating also, in connection with a water supply, requires an immense amount of persistent care to keep it from tarnishing.

The bowl of the spittoon, illustrated in connection with the chair, is of porcelain prettily decorated in red and gold, and has a hollow rim through which the water runs, coming into the bowl through very many small openings. The bowl is pretty, is easily kept clean, and swinging as it does on the bracket, is never in the way.



The arrangement of the base of my operating cabinet is, I think, in the main desirable, though the general design of the separate cabinet of drawers on the top of the base still leaves room for improvement, both in appearance and convenience.

The upper division of the base, to the right, is used by me for soiled napkins and towels. It is convenient to my right hand and is out of sight of the patient. The larger divisions underneath, contain mostly various kinds of dental supplies.

I have illustrated several drawers only to show the great convenience of minutely subdivided drawer space. The drawer having the separators and right angle burs, has a tray sliding on the one below it, and alto-

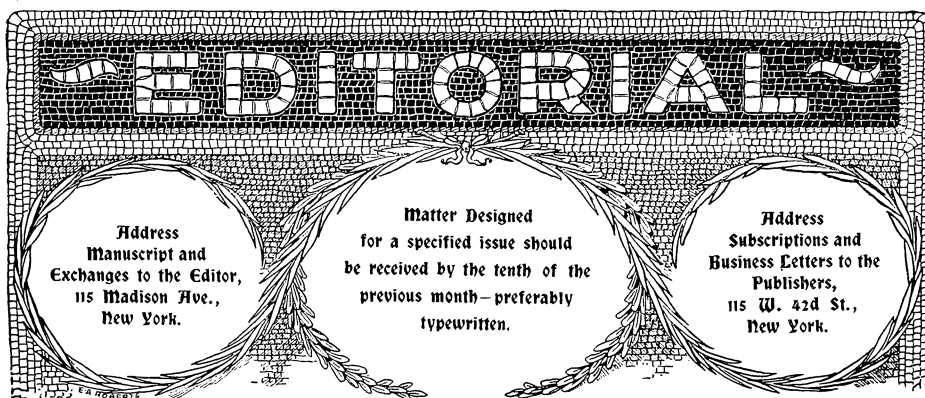
gether has eighty-one compartments. The great convenience of these subdivisions can only be appreciated after use. With such a vast number of compartments, the putting away of instruments by the assistant, in orderly sequence of size or varied use, is made very easy, and the ability to find an instrument *always* just when it is wanted, is made nearly certain.

So many new features in the practice of dentistry have been adopted, mainly in the last decade, such as bridge work, and the use of electrical devices of various kinds, that the mechanical armamentarium of the dentist has been increased and changed to a very great degree, so that the older forms of cabinet no longer serve their purpose. More space, and especially more subdivided space, subdivided with reference to particular uses, is imperatively demanded by each of the profession who has been unable to devote the time and money necessary in the making up of an individual cabinet suitable to his necessities.

Will the dental depots meet our wants?







## The Dental Harvest.

The Christmas period approaches and the year ninety-seven fast fades away. Reams of paper and quarts of ink have been utilized during the twelve-month in the production of dental theses, many of which have found their way into print, much of which matter perhaps might better have been consigned to the waste basket. But so near the holiday season one cannot be captious, and specifications would be invidious. Let us rather look upon the better side, and inquire, what, if anything, has been produced which marks a distinct advance, a step forward in dental progress?

**Microscopic  
Revelations by  
J. Leon Williams.**

Above and beyond all the papers of the year towers the magnificent work of Dr. J. Leon Williams. This paper is important for what it demonstrates, but perhaps it is quite as much so, when viewed from a totally different aspect. What was presented to the profession was merely a somewhat lengthy scientific paper, accompanied by numerous photographs. But behind that, what? Years of labor! Months of study! Weeks of thought! Nights of toil! And the result, one paper! The spectacle is inspiring! One stands upon the summit of an accomplishment of this character, as upon a mountain top, and gazing down, what a small man that is in the valley, who having read a little paper, and having seen it in print, actually presents it for a second time at one of the summer conventions, so proud is he of his tiny achievement? And that other fellow, how microscopic does he appear! The one who having succeeded in getting his name upon a prominent programme, prepares a paper, the major part of which he borrows, and some of which he bodily abstracts verbatim from another essay, published

not four months before. Verily, it would take Dr. Williams and his microscope to find the morals of that brilliant dental writer, in whose behalf his friends have asked for leniency. Well, the matter may rest, at least until after Christmas.

The publication of the paper by Dr. Williams led men to ask, "Of what practical benefit can such work be?" and the prophecy was made that great practical results would follow. Some of the structures which must stand upon the foundation laid by Williams already are rising into view, the most important of which, perhaps, is the announcement by Dr. A. C. Hart of what he considers to be a successful effort to produce immunity from dental caries. The method is described in full on page 839 of this volume, and whether or not experience should establish the correctness of his views, it is more than probable that he has presented us with a problem which in the near future will receive much scientific attention; moreover, he has indicated a road to success which seems to be in the proper direction.

<p><b>Progress in the Science of Electro-Medication</b></p>	<p>Cataphoresis more than anything else has received prominent attention and study during the year, and it is important to note that beginning as a mere method of benumbing pain, its advocates have gone further, and are now clamoring for recognition of electricity as an important means of introducing remedial agents into diseased territories. A conspicuous worker in this field has been Dr. Wm. James Morton, and the profession will welcome the announcement that he has in press a book which ably treats of the whole subject from the dental as well as from the medical point of view. Dr. Bethel's experiments in dealing with minute root canals, electrically depositing the salts of silver, is not the least important of the efforts made with the aid of the battery.</p>
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If any one dare to peep into the future the announcement may be made that perhaps the most pregnant subject for discussion during the coming year will be pulp capping. This is to be along somewhat new lines.

<p><b>A New Era of Pulp Capping about to Dawn.</b></p>	<p>Pulps are to be capped, and deep cavities lined with medicated cements. It was long ago suggested that medicaments might be advantageously incorporated with our phosphate filling and Dr. Charles Atkinson reported a long series of experiments in this direction. Recently Dr. Stowell (<i>Cosmos</i>, Nov.) has suggested that the powder of hydronaphthol mixed with the powder of our oxy-phosphates, furnishes a suitable means of filling over deep seated caries without removing all of the decay.</p>
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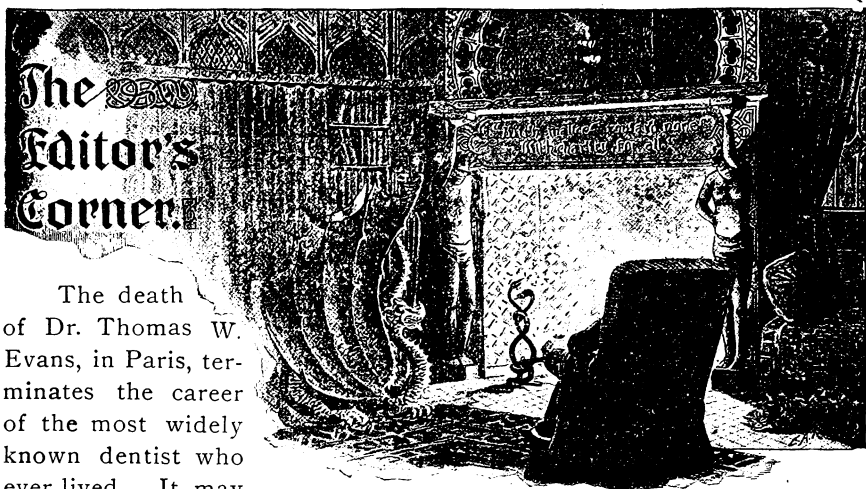
The proper sterilization of the lathery layer, which cannot be removed without possibly exposing the pulp, has been long advocated, but no method of accomplishing this has resisted the tests of time. The crop of dead pulps has been too great for conservative operators to take risks. If the hydronaphtol cement will do this, we will have a valuable method of dealing with deep caries in young subjects. In the mouths of adults, with our present advanced methods of managing the root canals, it would seem that extirpation of the pulp and proper root filling would bring us the most certain safety. In addition to the hydronaphtol suggestion, there are already at least two preparations on the market for similar purposes. In Germany many are praising the virtues of Iodo-formagen Cement, while the Canadian dentists are pinning their faith to Oxy-pheno-banum, another medicated cement. The danger lies in the unscientific use of these preparations. Let us make haste slowly, and be not over anxious to cap a pulp which has bled.

**The Organization of A National Association** Historically the most important event of the year must be the formation of a National Dental Association. The leaders in our profession have striven for this for years, and now that it has been accomplished it should be the duty of every man who has the advancement of dental science, and the perpetuation of American dentistry at heart, to enroll himself not alone as a subscribing member, but likewise as a working member. Let us not merely attend the feast each year and drink of the wine, but rather let us plant a few seeds and raise a few grapes ourselves, that others may enjoy the fruits of our labors. While dealing with this subject of union, the suggestion might modestly be dropped that a union of the Faculties and Examiners Associations would be more inspiring to the plain members of the profession, than has been the dissensions and retrogressions of the past year. This kind of union at first might bring into mind the union of the historic Kilkenney cats, tied by the tails and hung across a clothes line. But sober thought will show that the better men in the two Associations have (or ought to have) a community of interests, with the one aim of elevating our profession. If others have more selfish objects in view, they should not be permitted to influence results. A union meeting of these Associations next year ought to be productive of a method of procedure whereby harmonious, progressive action, would not only be possible, but certain.

**The Progress Made by Items of Interest** Nothing is more nauseating than the practice of constantly bragging, so frequently indulged in by even prominent newspapers. How often we read: "The arrest of the boy who stole the old woman's apples, as exclusively reported in this paper yester-

day," and similar sentences. It is therefore with some hesitation that any reference is made to our magazine at all. Yet it is truly a part of the dental progress of the year that a dental magazine printing nearly one thousand pages, chiefly of original matter, all liberally illustrated, has been furnished at the low price of one dollar per year. The addition of five thousand names to our subscription lists attests the fact that the publishers' generous efforts in behalf of dental literature has met with popular approval. And now, with a Merry Christmas, and God speed to all, the first volume of the new *ITEMS OF INTEREST* may be closed.





## The Editor's Corner.

The death of Dr. Thomas W. Evans, in Paris, terminates the career of the most widely known dentist who ever lived. It may not be generally known that though having his residence in a foreign land, during the war of the Southern rebellion, he performed a most conspicuous and important service to the cause of the Union. He enjoyed the confidence of Napoleon III., and one day the Emperor visited him at his office and informed him that he had received such conflicting reports concerning the possible success of the rebels that he found it difficult to decide whether or not to recognize the Confederacy. If it be recalled at this juncture, that such recognition by France would have been as important to the Southern cause, as recognition by the United States would now be to the Cuban insurgents, it will be seen that Dr. Evans was an actor in a momentous matter. The Emperor after some discussion said, "I wish I had some trusted messenger, whom I could send to the United States to investigate!" Dr. Evans promptly replied, "I will go, if you wish!" and he was accepted as the imperial envoy. On his arrival in this country he hurried to Washington and explained the situation to President Lincoln who disclosed to him so much of his plans as to enable Dr. Evans on his return to Paris to convince Napoleon that the Confederacy could not succeed. Thus France remained neutral.

Perhaps the most interesting part of the career of the late Dr. Evans was the share which he took in assisting the French Empress to escape from Paris. Early during the morning of September 4, 1870, the news of the disaster of Sedan and the surrender of Marshal McMahon's army of 75,000 men to the Prussians, coupled with the abdication and capture of Napoleon III., reached Paris, and in

**How Dr. Evans  
Aided the Escape  
of the Empress.**

the afternoon the city was in a fearful turmoil, overrun with mobs and anarchy rampant everywhere. The red flag had been hoisted and the authorities everywhere were powerless.

Mobs began moving on the Tuileries, and there was nothing left for the Empress but to escape as quickly as possible from the palace. Therefore, according to the story told by Dr. Evans while in Philadelphia in September last, the Empress, accompanied by Mme. de Breton, Prince Metternich, and Signor Nigra, the Italian Minister, attempted to escape by running down a private staircase leading to the palace gardens, but the mob was before her. Thereupon they turned back, traversed the gallery of the Louvre to the door leading to the Place St. German Auxerrois, opposite the church of that name, from which building a narrow passage led to the street.

There they could hear the shouts of the mob and later plunged into the crowd. The Empress was soon afterward recognized by a street urchin; but the lad's shout was not noticed and the Empress and Mme. Le Breton were thrust by their companions into a cab. But they soon afterward discovered that they only had 3*f.* between them, probably not enough to pay the driver, and so in order to avoid a scene and the possible capture of the Empress they alighted and walked on. Suddenly the Empress realized that they were near the house of Dr. Evans, and they hurried to him for assistance. This was immediately forthcoming. Mrs. Evans was out of the city, and so the Empress was given her room, and clothing from her wardrobe was selected as a disguise.

First the doctor tried to get a pass to leave Paris, but failed. Every exit was guarded by troops. Happily he found that one of his friends, also a patient, was in command of the troops at the Bridge of Neuilly, and by some means he succeeded in informing the latter that he would like to pass over the bridge that night with two of his lady patients. The Empress was to play the part of a feeble woman, who was being taken away to a sanitarium, while Mme. Le Breton was to personate her nurse. When all the plans were completed, Dr. Evans at dusk placed the Empress and Mme. Le Breton in his carriage and drove to the bridge.

There it was stopped by the men on duty, but the nerve of the doctor stood him in good stead, and he succeeded in passing through the troops. Eventually they made their way to Deuville, after two days of anxious traveling, during which the fugitives were several times stopped and questioned. But the doctor was ready for every emergency, and the Empress passed on without being recognized. At Deuville Dr. Evans went to Sir John Burgoyne, owner of the yacht *Gazelle*, and, after with difficulty persuading him that he had the Empress in his charge, Eugenie was embarked on board the yacht, and crossed the Channel in the gale which wrecked the British battle ship *Captain*.

The latter, as a curious coincidence, was commanded by a son of Sir John Burgoyne.

**First Prominent  
American Dentist  
in Paris**

It is commonly supposed that the first American dentist to make for himself a prominent position among the nobility of Europe, was the late Dr. Evans, but this is not true, and in connection with the account of the death of Dr. Evans it may be pertinent to record the facts. Early in the century there lived in Charleston, South Carolina, a dentist named C. Starr Brewster, who enjoyed a lucrative income, from a practice among the most cultivated residents. He took into his office as a student, my grandfather, B. A. Rodrigues. In those days there were no dental colleges, and it may be of interest to give here a copy of a document, such as dental apprentices received in those days, when their preceptors deemed that they were skilful enough to practice. The original of the certificate, of which the following is a verbatim copy is still in my possession. It reads:

"Mr. B. A. Rodrigues having pursued the study of Medicine and Surgery as a private pupil under the instruction of H. Frost, M. D., Prof. of Materia Medica in the Medical College of So. Ca. and having attended lectures in that institution, has for some time past been a pupil in my office and acquired a knowledge of Dental Surgery which qualifies him to perform any operations therein. I therefore recommend him to my friends and the public as being fully entitled to their confidence.

C. STARR BREWSTER, Surgeon Dentist."

"Charleston, 1st March, 1832."

On the back of this document, in my grandfather's writing is a note which reads, "Took charge in Aug., 1833." This means that in August, 1833, Dr. Brewster abandoned his practice in Charleston, yielding it to his pupil, who became an M. D. by graduating from the Medical College in 1834, such prominent South Carolina names as Holbrook, Wagner, Moultrie, Ravenel and Frost appearing on his diploma. With this testimonial, Dr. Rodrigues readily held the practice which Dr. Brewster had built up, and later became one of the most prosperous and widely known dentists in the South, at one time being vice-president of the old American Dental Convention.

Thus it would seem that about the year 1834 Dr. Brewster moved to Paris. The Baltimore Dental College was chartered in 1839, seven years after Dr. Brewster gave Dr. Rodrigues the curious "diploma" above recorded. It was not until 1846 that Dr. Evans left this country for Paris. Meanwhile Dr. Brewster had made a fortune, and his practice had grown to such an extent that he felt the need of assistance. Naturally he wished an American. He visited this country, and it so happened that about that time, at a fair in Lancaster, Penn., young Evans had placed

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study of medicine and Surgery as a  
Private pupil under the instruction of  
H. Gray M.D. Prof. of Materia Medica in  
the Medical College of La Sa and having  
attended lectures in that institution  
has for some time past been a pupil  
in my office and acquired a knowledge  
of Dental Surgery which qualifies him  
to perform any operations therein. I there-  
fore recommend him to my friends and  
the Public. As being fully entitled to their  
confidence.

C. S. S. S. S.  
Surgeon-Dentist

Charleston  
1st March 1838



on exhibition some natural teeth filled with gold. Dr. Brewster saw these specimens, and took Evans with him back to Paris. Subsequently he abandoned practice, giving his patients into the hands of Dr. Evans, as he had previously done to Dr. Rodrigues. For thirty years thereafter the sign on Dr. Evans's door read, "Evans, formerly Brewster." Thus it would seem that while Dr. Evans through his association with royalty, has attained more fame, after all his entire career depended upon the foundation laid by C. Starr Brewster, the pioneer of American dentistry in Europe. The certificate which Dr. Brewster gave to Dr. Rodrigues is as valuable as it is quaint, being in the handwriting and bearing the signature of the first man who made the rest of the world recognize the superiority of American methods in dentistry. Some day perhaps I may present it to the Dental Museum in Washington.

**State Dental  
Laws Possibly  
Unconstitutional.**

The following communication from Dr. A. B. Crawford, of Grand Rapids, Wisconsin, in proportion to its length, contains more good old fashioned common sense than any letter which has reached us in many weeks. It might be read with profit, by all the "dental law makers" throughout the country.

Apropos of some editorials and correspondence appearing in *ITEMS OF INTEREST* of November, please allow me to quote from Article XIV., Sec. 1st of the amendments to the constitution of the United States:

*"No State shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States."*

It is a well known fact that it is almost impossible for men in the dental profession to change location from one State to another State in this Union of ours, except by answering a set of questions, propounded by a Dental Board, unless he is in possession of a diploma from a recognized Dental College, and in at least one State, the man with a diploma is no better off than those without unless obtained from a Dental College in said State. Are we not getting a little too much law? Are we not abridging the liberties of the people? Are such laws enacted solely for the benefit of the public?

Is the dear public such a fool that it does not know who it wishes to employ professionally? Are the people of any one State more in need of a supreme power to guide them in their choice of a dentist or physician than their neighbors of an adjoining State? Is a practitioner any less competent because he has changed from one State to another? Are we not one great nation, in one great country and under one flag? The writer is not a lawyer, but he does not for a moment believe that any law would stand a test before the Supreme Court of the United States, that would seek to prevent a professional man from locating in any State for

the practice of his profession, if he had been legally competent to practice in any other State.

To the Dental and Medical Colleges I would say, "educate your students to a high standard." To State Dental Boards, and Medical Boards as well, "license any man, graduate or non-graduate, who certifies properly that he has been in reputable practice continually for ten years."

**Dental Office  
in the Guise of a  
Dental College.**

It was pointed out in last month's issue that there is a definite reason why the advertising fraternity prefer to do business as institutions, rather than as private individuals. The chief reason is that the mass of the people have been taught to believe that the highest medical skill is obtainable in hospitals and infirmaries. These men consequently operate in such a manner as to lead the people to believe that their establishments are similar to regular hospitals. A glaring example of this class is cited in the following communication from Dr. Gooderl, of Chicago:

In the Editor's Corner of the November ITEMS I read with no little interest and amusement, "Fraudulent Dental Advertisements." For the benefit of our Eastern brethren, especially those of New York and Pennsylvania, I will state that for fraudulent advertising Chicago in the parlance of the street gamin 'takes the cake.'

"We have a place which goes under the name 'Union Dental College.' Their advertisement reads: 'Dentistry free to those of limited means. The Old Reliable Union Dental College has stood the test of time. All work done by dentists of long experience who have come from all parts of the world to learn our system of painless dentistry.

"Come in and have your teeth examined by the professors.'

"The best equipped college in the world.'

"Cannot something be done to suppress this abuse of the unsuspecting people who daily swarm to these places?"

The remedy would seem to be simple. It is probable that laws for the suppression of such fraudulent practices already exist in all States; if not, it should not be difficult to pass a statute which would be operative. In the State of New York no business can be conducted in the name of a company, without a charter. For example: certain persons known to me, united in business and placed a sign over their store which read, "Union Hardware Compnay." Within one month the police took the sign down because no such company legally existed. The law which suppressed this method of doing business could probably be made to reach the "Dental Parlors." If not, let all States enact a law to this effect.

"No person or association of persons shall conduct the practice of

medicine or dentistry, within this State, using a sign bearing other than the personal name or names of the practitioners, except such hospitals, infirmaries, or colleges as have been regularly chartered under the laws of this State. Any infringement of this law shall be considered a misdemeanor, and the punishment shall be fine or imprisonment or both, etc., etc."

This is not drawn in proper legal form, but is merely a suggestion. When Dr. Tommy Jones, D. D. S., is deprived of the privilege of calling his place "The Imperial Dental College" and is compelled to practice as "plain Tommy," the rush will pass his doors, rather than "take the elevator." Better still, *the man without a dental degree will hesitate about investing his capital in dentistry if compelled to use the name of one of his hired men, under which to conduct his business, thus establishing a reputation for some one who may elect to open a separate place as soon as "business prospers."* Of course, no law would be constitutional which would attempt to suppress advertising, but a law which compels a man to do business in his own name would be declared equitable in any test.

In our last issue, dealing with this subject, it was **Educating** advised that much could be accomplished if Dental **the Public** Societies would regularly prepare papers suitable **Through the Press.** for popular reading, and supply these to the newspapers. Furthermore, the offer was made that this magazine would undertake to have such matter published throughout the country. Believing this to be a valuable idea, but also believing that whilst the majority of dentists would agree that "it would be a good thing" no concerted move would be made towards its accomplishment, we have decided to act in this matter independently. Consequently the paper by Dr. A. C. Hart, entitled, "Bacteria of the Mouth," which appeared in our November issue, has been abbreviated and rearranged so as to be more suited for the ordinary reader, and this will be published simultaneously in between two and three hundred newspapers. In order to avoid any accusation of "advertising" no mention is made of Dr. Hart nor of ITEMS OF INTEREST. Consequently there will be no advertisement except for true dental progress. Other papers used by us, will be similarly treated, whenever suitable.





## Loosening Teeth, or Chronic Alveolitis.

PYORRHEA ALVEOLARIS, PHAGEDENIC PERICEMENTITIS, RIGG'S DISEASE, ETC. ITS CAUSES, CLINICAL HISTORY AND TREATMENT, WITH GENERAL DIRECTIONS FOR CARE OF THE TEETH. In Two Volumes. By DR. HENRY S. NASH, New York. Burton F. Welles, Publisher, New York, 1897.

### Volume I.

This book of two hundred and ninety-nine pages is the latest exposition presented to the profession *and the public* in reference to the cause and treatment of this pathological condition.

After a careful perusal of the volume, which is written in a very entertaining style, it is difficult to know how to treat it. If the promises held out by the author, as to his knowledge of the etiology and a wonderful method of curing certain conditions, are really to see the light of day in Volume II, the author has made a serious error in not delaying publication until the work could be judged as a whole. This becomes even more patent when he says that the work is the first publicity given to thirty years of constant research in this direction. Volume I in itself, outside of any personal views of opposition to various statements, is very unsatisfactory as a professional work, in that the author states that he gets beneficial results, if not a cure, from certain therapeutic agents and deliberately refrains from giving the names of said agents; he even descends in the chapter on "The Care of Teeth" to advertise a tooth powder, the formula of which he claims to have received from Dr. Arthur, by giving the address at which this powder can be purchased, and forgetting to *publish the formula itself*. This alone ordinarily would preclude such a book from serious consideration, but the author shows such a thorough knowledge of pathogenic conditions that for the present we must overlook such an ethical breach.

The first twenty-two pages are occupied with a historical recital of his personal connection with the subject, and while they are entertaining, at once indicate the strong bias of the writer; in fact he does not live up to his main promise "to use plain language."—There are places where he goes out of the way to coin new words, which certainly appear at times

to be ill used, as in speaking of *apical* hypercementosis he used the word *arconic*. He fumes especially at the use of "pyorrhea alveolaris." It takes just as long to say chronic alveolitis, which certainly is no better name. We are not overpleased with the term pyorrhea alveolaris, but it will continue to be used until some substitute is introduced better than chronic alveolitis. The author can attach the same qualifying adjectives for the purposes of classification to pyorrhea as he does to alveolitis.

The book is well worth a careful perusal if for no other reason than that the writer stamps himself as a successful practitioner by reason of his wonderfully clear observant powers. His descriptions of the multitudinous variations of pathological conditions of the mouth, as he has seen them in his practice, are so clearly stated, and correspond so closely with the latest writings on this subject that it appears strange indeed that he should have drawn such erratic conclusions and mixed up so badly etiology with symptomatology. It is on this account that his classification seems not only absurd, but self-contradictory—devoting the latter portion of his book to what he calls "idiopathic alveolitis," while in his description of such cases he continually speaks of conditions of malnutrition due to various disorders. If alveolitis could be idiopathic, the extraction of the teeth should be a permanent cure for the disease, although he tells again and again of the lamentable termination of the lives of some of these patients even after the diseased teeth had been lost. We gladly give our testimony to the horrible deaths of some cases, but why not classify such cases with an adjective description of the exciting cause of nutritional derangement, the same course as is pursued in other specialties of the healing art?

There are various things about his method of treating roots that appear strange. He speaks in distress of having lost two patients for each of whom he had filled "one root of an upper molar, the nerves in the others being still alive. Both resolutely refused to have the other roots filled. These consequently ulcerated after the remaining nerves died and the teeth were lost, the blame being laid to the fillings instead of the lack of them." He certainly was blameworthy in filling any one root of a tooth before he had removed all the pulp tissue in such a tooth, even though some evidence of vitality in the other roots remained. He certainly does not appear to be abreast of the day in handling either pulpless teeth or such as should have the pulps removed. For in speaking of what he terms "arconic" hypercementosis in one breath he admits that amputating the end of the root would *theoretically* be its only salvation, and in the next line says this operation would not be feasible because the "nerve" would die and such a wide open canal could not be properly filled. The literature on the subject of amputating ends of roots shows

that the pulp is invariably first removed and canals filled before any such operative measure is undertaken.

Perhaps the most interesting and instructive chapter in this little book is the one concerning lead, mercury and bismuth. It is well worth careful perusal, and if the ideas as there expressed of the frequency of bismuth pyorrhea alveolaris are borne out by investigation, it will be a sufficient recommendation for the book. The author deserves great credit for the strong position he takes relative to the value of contour restorations. On the other hand, his idea of a "*dental surgeon's solemn duty to have nothing whatever to do*" with lesions of the mouth which are indicative of systemic taint appears very strange to a medical man.

Neither can we assent to his assertion that deposits do not occur on or near the ends of the roots independent of conditions about the gingivæ, because we have seen to the contrary. This appears to be one of the few pathogenic conditions which he has been unable to read clearly. He deserves, however, much credit for calling attention to the various phases of the gum in different diseases, and their great value for an early diagnosis. Still, with such a statement clearly defined, he falls into the error of speaking at great length of idiopathic alveolitis. We feel that the errors of deduction made by the author are largely due to his lack of association with other dentists and conversely it is a marked example of the advantages he might have gained by closer intimacy with his own colleagues.

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### American Text-Book of Operative Dentistry.

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In Contributions by Eminent Authorities. Edited by EDWARD C. KIRK, D.D.S.  
Illustrated with 751 Engravings. 800 pp. 702. Lea Bros. & Co.,  
Philadelphia and New York, 1897.

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Chapter VI is the production of Prof. S. H. Dr. S. H. Guilford's Contributions. Guilford, and treats of "Preparation of Cavities—Opening of the Cavity—Removing the Decay—Shaping the Cavity—Classification of Cavities." It is a great pleasure to be able to thoroughly read this important chapter and give it so general approval, although we shall not hesitate to differ on a few slight points. In one sentence the author approves of the most thorough excavation of cavities, and then places a strong limitation thereto by advising the leaving of decalcified dentine in the bottom of the cavity and trusting for further safety to the germicidal action of various therapeutic agents. The claim that in the ma-

jority of cases it will be converted into normal dentine cannot be accepted, and if this did occur even more frequently, it would not excuse our risking the danger of further disintegration of dentine in other cases. We have ample means at the present time to introduce an artificial barrier against thermal changes, more potent and less dangerous to the pulp's vitality, than leaving in the cavity disorganized dentine.

We regret that the author should accept any excuse for permitting any portion of the cavity preparation to be done before the dam is applied. We cannot assent to the plea that the patient's comfort even is enhanced by not applying the rubber at once. This is merely a prejudice on the part of the patient, too often encouraged by the dentist. As a rule, where this prejudice is overcome, patients will admit that they are far more comfortable if the entire operation is done with the rubber dam in position; it is needless to speak of the advantages accruing to the operator.

In speaking of shaping the cavity, we cannot too strongly endorse Dr. Guilford's plea against grooves and starting pits at the cervical margin of cavities. We would also like to give our special approval to the author's recommendation of the bevel of the outer wall of the enamel. The scientific classification of cavities is to be strongly endorsed as being simple and up to date. The detailed manner of preparing cavities under each class is given in a very concise and lucid manner, and illustrated with examples which are excellent.

Prof. Guilford has contributed one other chapter, the title of which is, "Treatment of Fillings with Respect to Contour, and the Relation of Contour to Preservation of the Integrity of Approximal Surfaces." This is a short article, intelligently illustrating the value of contour work in its proper sense. Any one in doubt as to the real value of true contour restorations, is earnestly recommended to give this chapter careful perusal.

(To be continued).





## **Dr. Thomas W. Evans.**

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Dr. Thomas W. Evans, the most famous American dentist practicing in Europe, died in Paris of angina pectoris at nine o'clock on the evening of Sunday, Nov. 14, 1897.

Dr. Evans had but lately returned to Paris from the United States, where he had brought the body of his wife, who died in August last.

Dr. Evans was born in Philadelphia Dec. 23, 1823, of humble parentage, and elected, when only thirteen years old, to become a dentist, at which his father, "Major" Evans, was so furious that he refused for five years to admit him to his presence.

He went to Paris in 1846 and made a great reputation there, receiving from the courts of Europe more honors and decorations than have ever been conferred on any European of less than royal blood, the single exception being Bismarck.

He was made a Grand Commander of the Legion of Honor, a Commander of the orders of St. Ann and St. Stanislas of Russia, Commander of the orders of l'Osmainé and Medjidie of Turkey, Commander of the order of Frederick of Wurtemberg, Commander of the order of Zachringen of Baden, officer of the orders of the Crown and Aigle Rouge of Prussia, officer of the orders of the Oaken Crown of Holland and St. Michel of Bavaria, member of the orders of St. Maurice and St. Lazare of Italy, of St. Sauveur of Greece, etc.

Among his distinguished patients have been Queen Victoria, the Sultan of Turkey and Napoleon III.

Dr. Evans received a common school education, then entered the shop of a goldsmith, where his manual skill in the making of gold plates decided him to become a dentist. He entered the Jefferson Medical College and was graduated at eighteen with honors, receiving a special medal. Later he won the gold medal of the Franklin Institute for proficiency in dental surgery.

He became first assistant and then successor to Dr. Brewster and entered on his practice at the court of the Prince-President.



Napoleon III. was among his earliest patrons, and through him he was introduced to the family of the King of Denmark. Among his other patients there were the King's daughters, afterward the Princess of Wales, the Empress of Russia and the Duchess of Cumberland; also his sons, the future kings of Greece and Denmark.

No American ever had such a footing at Marlborough House as Dr. Evans. He was the regular attendant upon the English royal family and two or three times a year was the guest of the Prince of Wales.

During the Franco-Prussian war Dr. Evans organized and maintained at his own expense an ambulance service that did incalculable good. He personally directed the movements of the Red Cross Society, and it is said was the only man in Europe who might pass from camp to camp.

Dr. Evans's fortune, which is estimated at \$35,000,000, was amassed largely by investing in real estate in the vicinity of the Bois de Boulogne, in Paris, previous to the vast improvements made by Baron Haussmann in the remodelling of Paris under the direction of the imperial government. Dr. Evans, it is said, had foreknowledge of the direction of these improvements from the Emperor and the Empress Eugenie.

His property in this city, in Philadelphia and Baltimore is valued at \$5,000,000.

Dr. Evans when here in August announced it as his intention to leave his fortune to the cause of education, probably for the founding of a national institute of dentistry. He had no children. He has two nephews, Colonel Charles F. Muller, of Utica, N. Y., and J. R. Evans, of this city. The Evans' residence at Philadelphia, which is still owned by the doctor, is situated at 4011 Spruce street.

In stature Dr. Evans was below the medium height, had stooped shoulders, a thin face, high cheek bones, and wore short side whiskers. He resided in a magnificent house in Paris, No. 43 Bois de Boulogne, which was well known to nearly all Americans visiting Paris. Dr. Evans was good hearted in the extreme, and had assisted many a penniless American to return home, after having stranded himself in France.

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### Resolutions of Missouri State Society.

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WHEREAS, in the providence of Almighty God, He has seen fit to remove from our midst two of our most valued members, Dr. Wm. N. Morrison, of St. Louis, and Dr. W. T. Reed, of Macon, and

WHEREAS, the fine personal character, the high professional standing and the general individuality of each of these men, who have held the highest office in this society, makes their loss a personal one to every one of us, as well as to the profession at large. Therefore, be it

*Resolved*, that in the death of Dr. Morrison and Dr. Reed this Association has lost two valuable workers, each of us a friend and the Dental profession members whose high ideals and ability made them an honor to the profession.

*Resolved*, that the deepest and most heartfelt sympathy of this Association is hereby extended to the bereaved families in their affliction, and

*Resolved*, that this expression of esteem and sympathy be placed in full upon the minutes of this society and a copy be sent to their respective families and journals.

JOHN G. HARPER,  
EMMA EAMES CHASE,  
G. W. TAINTOR, JR.

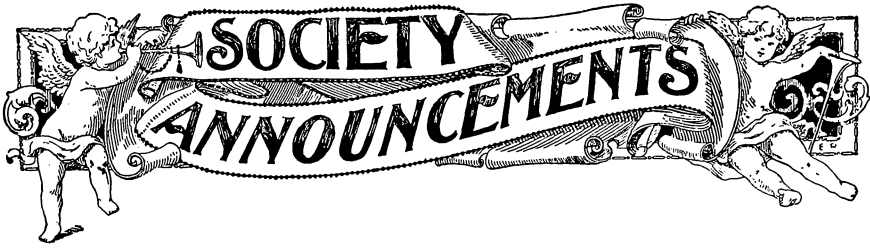
Missouri State Dental Association, Kansas City, Mo.

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### **Dr. J. L. Riggs.**

The death of J. L. Riggs, D.D.S., of Pawnee City, Nebraska, removes one of the most esteemed members of the Nebraska State Society. Born in 1868; graduated from the Dental Depart., Iowa State University, Class of 1891. Married the same year to Miss Susie Lichtenwalter who survives him. An earnest member of the Presbyterian Church, and an active member of the City Band, his early departure will be felt in the whole community.





## Northern Illinois Dental Society.

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To the President and Members of the National Dental Association, and to the President and Members of the National Association of Dental Examiners.

Gentlemen:—At the tenth annual meeting of the Northern Illinois Dental Society, held at Rockford, Ill., October 20 and 21, 1897, the undersigned were appointed a committee to draft and present to your Associations suitable resolutions, with a view to remedy an existing evil regarding the interstate practice of dentistry, and we herewith submit the following for your consideration:

WHEREAS, a legal practitioner of any one of the United States, who desires to remove to another State, is, under the existing laws, compelled to comply with certain requirements of the dental law of that State, and

WHEREAS, in many instances such legal practitioner, (sometimes of many years' experience) is subjected to a more or less severe theoretical examination, which cannot even be successfully passed by many who are fresh from the college halls, therefore be it

*Resolved*, that the National Association of Dental Examiners and the National Dental Association, be and are hereby requested to enact such rules, or to secure such modification of the dental laws of the various States, as, under reasonable restrictions, will enable competent practitioners to remove from one State to another without being compelled to submit to provisions, which are eminently unfair to a large number of capable dentists.

LOUIS OTTOFY,  
W. H. TAGGART,  
M. L. HANAFORD, Committee.

Attest: JAMES MORMANY, Secretary.  
Dated November 10, 1897.

**Jefferson County Dental Society.**

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The Jefferson County Dental Society will hold its third annual meeting at the Woodruff House, Watertown, N. Y., Monday, December 13, 1897. An excellent program has been prepared, consisting of clinics, essays, etc.

Dr. Ottolengui has consented to be present at this meeting, and will present a lecture on Orthodontia.

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**Ohio State Dental Society.**

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The next annual meeting of the Ohio State Dental Society will be held at Neil House, Columbus, O., Dec. 7, 8 and 9. One day will be devoted to clinics.

J. K. CALLAHAN, Chairman Ex. Com.

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**Southern Kansas Dental Association.**

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The Southern Kansas Dental Association will meet at Wichita, Kansas, Dec. 27, 28 and 29, 1897.

U. S. HOUGLAND, Secty.



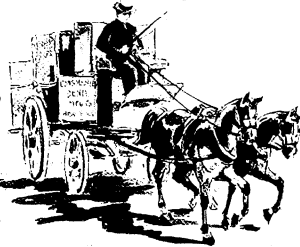
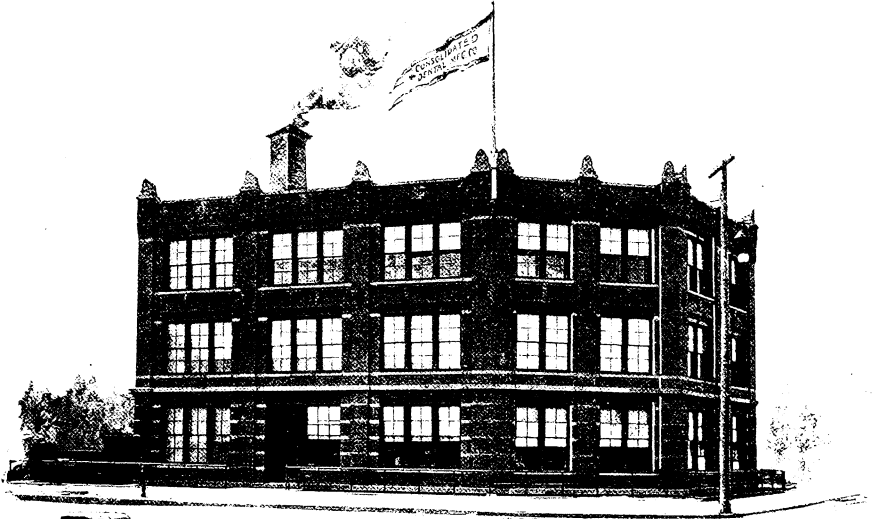
PORCELAIN MANUFACTURE.



The  
Discovery  
and  
Development  
of  
Porcelain  
Manufacture

Van Ness  
Manufacture

## ITEMS OF INTEREST.



THE making of porcelain teeth has grown to large proportions in the comparatively brief period of its existence as a distinct manufacturing industry. It is but little more than half a century since the first factory was started in the United States, and to this country belongs the credit of making the best tooth as well as the largest product for supplying the world. Because of the intricate details incident to the manipulation of the porcelain compound, knowledge of which is not acquired from the text-books, but results only from intimate acquaintance with the elements of porcelain texture, which knowledge is largely of a secret character, and is guarded with jealous care by its fortunate possessors, is the chief reason for the limited number of tooth manufacturers.

The three principal crude elements combining to produce porcelain are, in themselves, common, but how to compound them so as to produce results in imitation of natural teeth is what few can

## PORCELAIN MANUFACTURE.



accomplish. This is not to be wondered at, when we know something of the interesting history of porcelain. Clay or kaolin used in the manufacture of porcelain is the most universally distributed of mineral substances. This with feld-spar, silice and mineral coloring matters, also common, combine to produce the substitutes for the natural tooth.

Knowledge of how to combine these common elements of nature so as to make white or hard porcelain was confined for centuries to the ordinarily despised Chinese. The earliest known existing specimens of civilized manufacture are credited to Florence—made about A.D. 1575 as rare and costly presents for the nobility—whereas the records credit the Chinaman with having produced pure porcelain as early as 1800 B.C.

Porcelain manufacture was introduced into Japan from China about 1513, and this peculiar and interesting people have developed extraordinary and marvelous skill in manipulation of all kinds of pottery, producing some of the rarest and most elaborate specimens of minute richness ever made. The people of various European countries, chiefly France and Italy, worked and studied earnestly from the end of the fifteenth century to imitate the Chinese porcelain,

## ITEMS OF INTEREST.

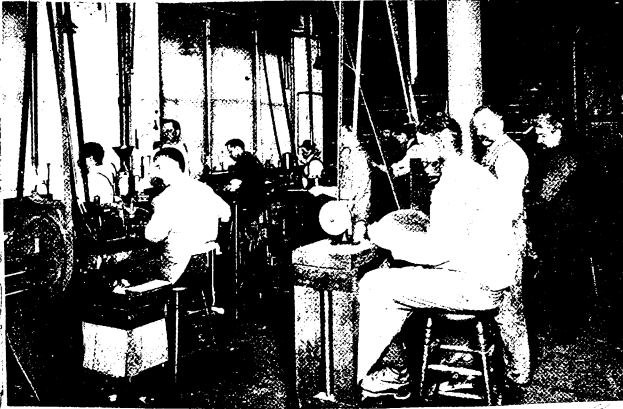


which, up to that period, was sparingly brought from China as royal gifts, and regarded as objects of great value. Attempts to imitate or reproduce the form of pottery made in the "Barbarous Countries" commenced in Venice about 1470, but difficulties seem to have been encountered and the manufacture of it was discontinued until 1504, when further efforts were made and continued spasmodically for a number of years. With the death of Francisco de Medici, 1587, the only maker in Europe, died the secret for nearly another century, when a Parisian named Claude Reverend again found the secret, and, under a patent granted him in 1664, commenced the making of wares in "imitation of porcelain, as fine as that from the East Indies." In 1673 another patent was granted to Louis Poterat.

The Saint Cloud porcelains made by a family named Chicanneau from 1693 attained great reputation and was the principal manufactory until the royal manufactory at Sèvres was established by Louis



## PORCELAIN MANUFACTURE.



XV., in 1745, the king himself becoming a partner in the works. Their wares made up to about 1770 were "soft" (pete Tendre) when the discovery of the kaolinic clays led to the manufacture of the hard porcelain similar to that made in China and Japan. An idea of the value attached to the Sèvres china may be gained with knowledge of the fact that a few years ago three flower vases made by the "royal manufactory" sold at public auction for \$40,000, and that the chief chemists of France devoted their energies exclusively to development of the art. Tea sets, vases, plain and highly ornamented, statuettes, dessert services, clocks, barometers and various ornaments constituted the product of this establishment, the most elaborate and gorgeous of all being known as the *Jewelled Sèvres* wares, the making of which commenced about 1780. This ware was richly set with imitation jewels, set in gold like the gilt ornaments on the richest sort of Japanese Satsuma ware.

The manufacture of porcelain ware in Germany has a unique history—its successful production being the result of an accidental discovery which ended in imitation of true porcelain.

In 1700 a young chemist of great ability, a native of Saxony, named Frederick Bottger, fled to Dresden, accused of practising arts

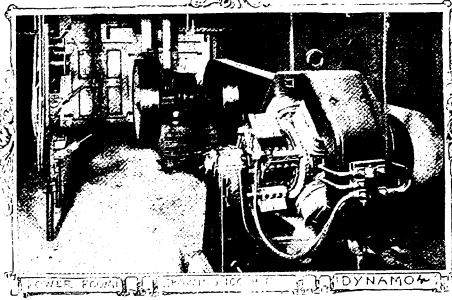
## ITEMS OF INTEREST.



of magic and searching for the "philosopher's stone." There, taken under protecting care of Augustus II., he was employed in experimental work connected with medical chemistry, afterwards with composition of pastes and clays for ceramic wares. He was kept in seclusion, carefully guarded, practically a prisoner, in order that his discoveries might be kept secret. In 1710, by a lucky accident, he discovered the secret he was working for. Noticing the weight of some new hair powder he was using he inquired what it was made of. Being told he immediately procured some, and started the experiment which resulted in his producing hard porcelain. Augustus II. established factories five miles from Dresden, surrounded by high walls, shut in by portcullises, to which none but workmen was ever admitted, and they sworn to secrecy under pain of penal servitude for life. No possible precaution was omitted, but in spite of all attempts to keep, the monopoly failed after a time.

The ambition to make porcelain became a "fad" with every king or reigning prince in Europe, and all the principal countries established factories. Sèvres, porcelain, Dresden china, Bristol ware, Royal Worcester are familiar names and indicate the successful manufacture in European countries of the wares which for ages were made almost exclusively in the ancient town of King Tih Chin, China. In this straggling old town on the banks of the river Chang is crowded a population of over one million people, the great majority

## PORCELAIN MANUFACTURE.



of them engaged in the work of making porcelain in over three thousand furnaces or factories, all carefully guarded by a specially appointed magistrate to care particularly for the imperial interests.

Though many links in the chain of development of ceramic art are lost, yet there is, as the brief review we have given indicates, much that is interesting and profitable to the student.

Porcelain was introduced into dentistry for the first time about the year 1776 under the following novel circumstances: An apothecary of St. Germaine, named Duchateau, having lost his natural teeth, was wearing a set carved from ivory. The effluvia arising from his laboratory work was absorbed by the ivory grinders, and became the source of great annoyance. This led to investigations which resulted in the substituting of a set of teeth made from porcelain by a porcelain manufacturer named Guerard. So satisfactory was this experiment that his friends sought similar relief, and the manufacture of artificial teeth from this beautiful substance was established. In 1878 a French practitioner named Dubois de Chamont bought the secret of compounding, and secured a patent for the discovery both in France and England. About 1817 Dr. A. A. Planton arrived in the United States, and is credited with making the first set of mineral teeth in America, though a Dr. Villers, of Boston, contests with him the claim of priority, Charles W. Peale, of Philadelphia, being next in line to claim the honor of establishing the industry. These pioneers in the adaptation of porcelain to use in dentistry did all the compounding of materials and carved each individual tooth, requiring great skill and care, being at the same time costly,

## ITEMS OF INTEREST.



laborious and vexatious. Following the successful efforts of these few pioneers, prosthetic dentistry became an established and honorable profession, making continuous and rapid growth.

Samuel W. Stockton established in Philadelphia, 1825, the manufacture of porcelain teeth for the trade. Many have since then ventured to establish a business, but few have succeeded because of their lack of knowledge in the art of compounding the porcelain materials.

The Consolidated Dental Mfg. Co., of New York, is one of the youngest competitors in the race, and in two short years has grown from the smallest to the second largest producers in the world. Their marvelous development, the result of being able to supply the profession with a tooth combining the form, texture and essential qualities required.

It was in May, 1895, that Dr. J. F. Frantz assumed the responsibility of management of the business, with Mr. George H. Whiteley in charge of the laboratory and details of manufacture. They being financially supported by Messrs. A. H. Bultman, R. C. Bultman, G. J. Bultman and M. J. Murray as officers of the company.

The offices were at that time located at No. 53 West 42nd St., and their factory at No. 55 E. 113th St., New York.

The capacity of the factory was soon outgrown, and they erected the handsome and commodious factory at 162nd St. and Brook Ave.,

## PORCELAIN MANUFACTURE.



TOOTH  
DEPT

illustrated herewith, with sectional views of various departments. The electrical plant for furnishing power, heat and light is one of the most complete in the country, having a 100 horse-power engine operating the 60 kilowatt generator which supplies the ten Eddy motors in various departments.

The mold-cutting room, molding, trimming, carding and sliding departments are equipped in a thoroughly modern way, and the merits of their product is testified to by members of the profession in every part of the world, in the thousands of enthusiastic testimonials sent the company.

That the reader may know something of the details of making a porcelain tooth, we will pass hastily through the various departments of the factory.

On the ground or basement floor are located the boiler rooms, engines, dynamos, tooth furnaces, wax and grinding rooms. In the grinding rooms a number of men are engaged, carefully selecting the crude materials—feld-spar, kaolin and silice—which are thrown into crushers and mills which grind them to fine powder, this being carefully dried and sifted for use in the compounding laboratory on the third floor, where the coloring matters for producing desired shades of teeth are incorporated and the material properly labeled and passed to the molding room on the same floor, where the “batches” for the working “gangs” are made up. A block or

## ITEMS OF INTEREST.

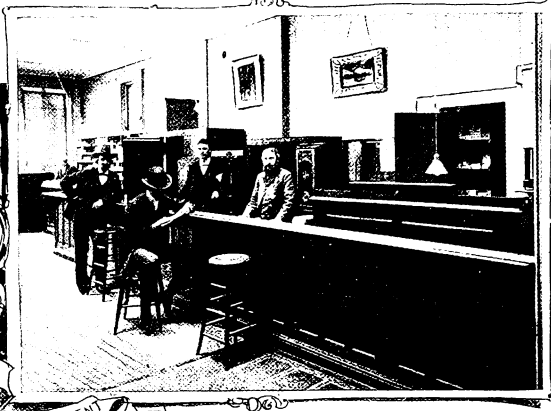


INSTRUMENT AND FURNITURE DEPT.

gum tooth is made from three "batches" of material; first, the gum; second, the body, and third, the enamel, which are prepared for the molders' use on large marble slabs, being delivered to them in a soft, putty-like state, and by them dexterously placed into proper position in the brass molds which are in two parts, the platinum pins having been inserted in each tooth before the molding process. The molding process completed, the molds are tightly closed, expelling surplus material and they are conveyed to the biscuiting oven, where heat drives moisture from the material, leaving the teeth sufficiently hardened for handling. A few taps of the hammer knocks the biscuiting teeth from the mold and they are carried to the trimming room where the operators with files and saws separate the teeth and trim off all superfluous material, after which they are carefully placed on clay slides covered with a bed of silex. From this department elevators carry the slides to the furnace rooms where the teeth are baked in muffle ovens at an intense white heat, which develops the color and gives them polish. Removed from the furnace to annealing ovens they remain until cool enough to be handled, when they are taken to the carding room on the first floor where all perfect teeth are placed neatly on wax cards ready for the market.

The salesrooms and offices of the Consolidated Dental Mfg. Co.

## PORCELAIN MANUFACTURE.



GOLD

DEPARTMENT

were located at No. 53 West Forty-second street until November, 1896, when they were removed to the large building occupied for many years by the late R. S. Williams, whose entire plant for the manufacture of his celebrated gold specialties and all the merchandise, etc., inventoried by his estate at \$197,934.79, had been purchased by the company.

The entire building was remodeled and is now utilized as follows: In the cellar are boilers, dynamos, rolling mills, smelting furnaces, etc., for first processes in manufacture of the gold product, alloys, etc. The ground floor has packing room and shipping department in front portion, the rear being divided into a number of small compartments where the employees do annealing of gold, rolling of cylinders, and preparing same for market. Upon the second floor are located the tooth, gold and instrument and furniture departments, herein illustrated. The business offices occupy the third floor, the wholesale department and stock rooms on fourth floor, and the fifth floor has laboratory and refining room of gold department and the "Items of Interest." Sketches of some of the various departments from photographs are shown herewith.

The dental profession is generally familiar with the extraordinarily unfavorable conditions which confronted the Consolidated Dental

## ITEMS OF INTEREST.



Mfg. Co., when, in June, 1895, the boycotting edict of the *combined dental trade* was established. Deprived of the opportunity to dispose of and distribute its products through the ordinary channels of trade, it was compelled to seek the favor of *the consumer direct*. Thanks to the dental profession, there was immediate and enthusiastic response to their appeal for support. Sense of justice as well as self-interest prompted them to respond to the invitation for encouragement. *The best porcelain teeth* that money could buy of any one, anywhere, at any price, were offered at such rates as the profession had never before known. A first-class, high-grade porcelain tooth at one dollar per set of fourteen had never been placed upon the market and though there was some prejudice to overcome, and many were skeptical for a time, yet these difficulties were conquered and as rapidly as the practitioner had opportunity to see and test for himself the true merit of the teeth and recognize the truth of claims made, did they respond.

It was recognized at an early period of the company's new departure that the entire profession could not be satisfactorily accommodated from the single New York center, and arrangements were accordingly made and the necessary capital invested for establishing branch houses and agencies in all parts of the world. The principal repositories of the company established in Boston, Chicago and Atlanta are illustrated herewith. Aside from these centers, active



## PORCELAIN MANUFACTURE.



BOYTON DEPOT



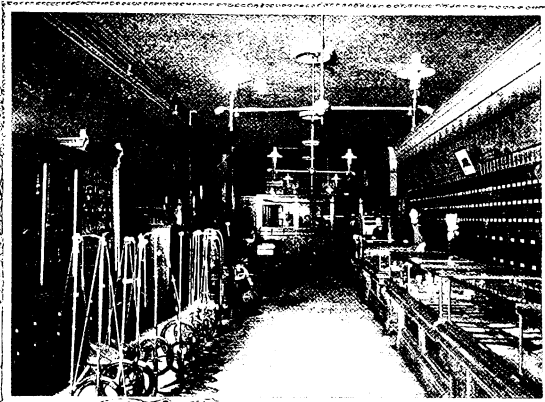
agencies exist in all the principal cities of the United States and all parts of the world.

Arrangements have just been completed for establishing an additional branch house in New Orleans. On June 1st the old established dental depot of The Wilmington Dental Mfg. Co., at 12 E. 23d Street, New York, recently owned by Mr. H. D. Hanway, will be conducted as the "down town" branch of the Consolidated Dental Mfg. Co., and on June 15 the Philadelphia branch will be established in the old principal offices of The Wilmington Dental Mfg. Co., at 1413 Filbert Street.

The monthly magazine, "Items of Interest," acquired by the company in August, 1896, under new and able editorial management and in new dress, is now a welcome visitor to the offices of the profession in fifty-five countries outside of the United States, having a larger clientele than all the dental journals of the world combined, testifying by their appreciation of a heroic effort to accommodate them and promote their best interests by that substantial encouragement and patronage which has in two short years established the Consolidated Dental Manufacturing Company in the very front rank of the dental business.

*The best teeth on earth for a fair price* has been the company's claim for favor. They have been tried and have not been found wanting.

## ITEMS OF INTEREST.



CHICAGO DEPOT

The devotion of this article so largely to the subject of porcelain and the porcelain tooth product of the Consolidated Dental Mfg. Co. should not lead the reader to the conclusion that they can only be accommodated by the company in this line of dental requisites.

Porcelain teeth are, of course, the leading specialty, but in all other lines it aims to furnish goods of highest quality at fair prices.

The most important specialty next to teeth is its Gold product, in connection with which it is not amiss to offer some reflections in view of the systematic efforts that have been made by the dental trade, in general harmony with the boycotting edicts dominating their relations with the Consolidated Dental Mfg. Co.

The Gold specialties of the late R. S. Williams had attained a world-wide reputation. He was known to possess certain secrets pertaining to the specialties he manufactured that the trade generally tried to persuade their patrons died with him. The fact is, that Mr. Williams was one of the most systematic of men and carefully recorded every formula pertaining to the preparation of his specialties. These were contained in numerous volumes which were carefully indexed for ready reference and were not destroyed, but became the property of the company with its acquisition of the business from his heirs.

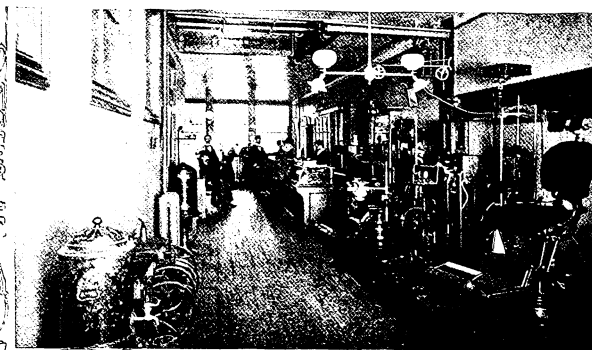
## PORCELAIN MANUFACTURE.



ATLANTA DEPOT

That there might be no possibility of deterioration by reason of faulty manipulation in details of manufacture, the same employees who served faithfully in the service of Mr. Williams for many years were continued in the preparation of them by the new owners of the business, and the general superintendence was entrusted to the Vice-President of the company, Mr. M. J. Murray, who was peculiarly fitted for this responsibility by reason of his thirty-nine years' practical experience in the manipulation and manufacture of gold and other precious metals, in another line. That the profession generally have *not* accepted the gratuitous misrepresentations of our unfriendly competitors is evidenced in the *fact* that in the six months that have elapsed since acquisition of the business, the demand for the R. S. Williams gold specialties has increased to such an extent as to necessitate a second increase in the manufacturing force that the late Mr. Williams employed in supplying it. The reduction which was made in the Standard Gold Foil was not attended by reduction in quality as all its users can testify. Four dollars per ounce was simply contributed to the consumer from the manufacturers' profit.

## ITEMS OF INTEREST.



DOWNTOWN BRANCH 12 E. 23rd ST. N.Y. LATE THE WILMINGTON DENTAL MFG. CO.

The plastic filling materials, the instruments and all the specialties which Consolidated Dental Mfg. Co. offer to the profession bearing their trade-mark, can be accepted and relied upon by the purchaser, as all of them are disposed of with a responsible guarantee accompanying their sale.

Self-interest as well as sentiment should prompt the practising dentist to patronize the company which has done so much towards promoting their financial interests.



## Plain Talks to Dentists, No. 10.

*"A single fact is worth a shipload of arguments."*

The following incident, we believe, will interest and should profit you:

A prominent dentist and one of the largest consumers of teeth in one of our largest cities visited New York during the past month, and whilst here accompanied the writer to the Consolidated Dental Manufacturing Company's tooth factory, where we familiarized him with the process of manufacturing. Questioning him as to whether he was a user of our teeth he answered that he had used our "Flatback" teeth for the past year with results more satisfactory than he had ever experienced with any other make, they standing heat of soldering with no evidence of change in color, grinding more satisfactorily and taking a *better* polish than any American tooth, and were of finer shade and texture than any tooth on the market, BUT HE HAD NEVER GIVEN OUR RUBBER TEETH A TRIAL.

Somewhat surprised I asked him *why*, if our plate teeth gave him such eminent satisfaction, *did he not use* our rubber teeth? He frankly admitted that the only reason he feared to risk the use of these was BECAUSE OF THEIR PRICE; that he only did first-class high-grade work in his practice, and always bought only the best, and accepting the common idea that price and quality must be synonymous, he argued to himself that our teeth at \$1.25 per set could not be as good as the teeth we sold for one dollar and sixty-eight cents per set.

"Is not the strain upon a plate tooth both in the mounting of same as well as in use far greater than a rubber tooth is ever called upon to sustain?" was our next query.

Answering emphatically yes, I then put the proposition, whether, if convinced that the materials and the compounding of them were identical in both "Flatback" and "Rubber" teeth, he would have any logical reason for using the one and not the other, he promptly replied "*certainly not*," as he felt quite as much interest in his bank account as the ordinary individual, and would certainly not pay the higher price he was accustomed to from prejudice for mere sentiment's sake. We then proceeded to enlighten him and effect conviction and conversion through his own knowledge of FACTS.

**Plain Talks to Dentists, No. 10—(Continued).**

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Escorting him to the molding room, where he saw the employés dexterously manipulating the porcelain compound in both classes of teeth and was shown that this material came from the same mill in the laboratory and was identical in every detail, he admitted that "seeing is believing." Knowledge had conquered prejudice, and he emphatically asserted that in future he would comfort himself with the exclusive use of "Consolidated" teeth, which his observations of the day had satisfied him must have *equal* merit regardless of whether in the form of "Flatback" or "Rubber."

The higher price we are compelled to charge for "Flatback" teeth is due to the fact of their requiring more than double the quantity of platinum in their manufacture, and their comparatively limited sale demands a larger proportionate profit in their disposal.

In conclusion we would say that we would be pleased to have opportunity to give a similar object lesson to any other of our valued patrons, who remain somewhat skeptical as to our ability to give them the best tooth that money can buy from any one anywhere at any price.

Very respectfully,

J. F. FRANTZ, Pres.



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*PRICES OF TEETH*

Plain or Gum Rubber, Single Tooth, each.....	\$ .09
Plain or Gum Rubber, Set of Fourteen.....	1.25
Flatback Long Pin Teeth, each.....	.12

A discount of 5, 10 and 12½ per cent. will be allowed for cash on purchases of \$25.00, \$50.00, and \$100.00 lots respectively.

# HYPODERMATIC TABLETS FOR Local Anaesthesia, DENTAL.

Formula of N. L. HOFF, D.D.S.

Our Hypodermatic Tablet No. 81, "Local Anæsthetic (Dental)," is made, as stated above, after the formula of Dr. Hoff, and we beg to quote from his paper upon the subject, published in the *Ohio Dental Journal*, as follows:

"The combination I am now using as a local obtundent yields good results. I use sterilized water to make the solution, and, to prevent possible decomposition, make daily or as needed for use. The formula I use is as follows:

℞ Cocaine.....gr. 1-2  
Sulphate of Morphine.....gr. 1-3  
Sulphate of Atropine.....gr. 1-200  
Sterilized water.....gtts. xxx  
Mix and inject hypoder. gtts. v to xv.

"For convenience I have had the Cocaine, Morphine and Atropine made into soluble tablets by Parke, Davis & Co., of Detroit, and in this way solutions of any strength desired may be quickly and accurately made with little or no inconvenience. As a solvent I use distilled water containing from 8 to 10 per cent. Euthymol to keep it sterile. If desired to make a 2-per-cent. solution all that is necessary is to dissolve one tablet in 25 minims of water; a 1-per-cent. solution can be made by dissolving one tablet in twice this quantity of water, or 50 minims. A 4-per-cent. solution can be made either by reducing the water one-half or adding another tablet to the 25 minims, etc."

IN TUBES OF 25, 45 CENTS PER TUBE; OR FOUR TUBES (100 TABLETS). \$1.65; OR, IN BOTTLES OF 100 TABLETS, \$1.55 PER BOTTLE; BUT THESE TABLETS PARTICULARLY, BEING MADE VERY FRIABLE IN ORDER TO BE QUICKLY SOLUBLE, ARE BEST KEPT IN TUBES OF 25.

Our *Descriptive Price List of Pharmaceuticals of Especial Interest to Dentists* will be promptly forwarded upon request. Just drop us a postal card.

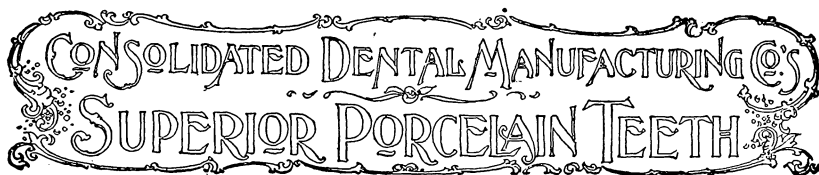


**Parke, Davis & Company,**

Detroit, New York, Kansas City, Baltimore, New Orleans, U. S. A.  
London, Eng., and Walkerville, Ont.

One of the things a Dentist most desires, when selecting PORCELAIN TEETH, is a large and varied assortment to choose from.

In the large illustrated Catalogue just issued, there is an entire department devoted exclusively to



Nor does the large assortment of moulds there represented comprise all of our stock, for there is a very large force of mould cutters constantly at work producing new forms, and many new ones have been added since our Catalogue went to press. But there is seldom a case that cannot be suited from the moulds which we have catalogued.

By the way, have you received a copy of our Catalogue? If you have not, one will be forwarded by express or mail, charges prepaid, upon receipt of your request for it.

When writing for the Catalogue, you might just as well enclose renewal of your subscription to ITEMS OF INTEREST, which is going to be better than ever next year.



# SANITARY.... CONDITIONS

DEMAND THE  
.....USE OF.....

## **“Aseptic” Dental Napkins.**

These “Aseptic” Dental Napkins are made of highly absorbent material, cut six inches square and sold

**Fifty to the Box for 25 Cents.**

It costs six and one-half cents a dozen for washing and sterilizing ordinary dental napkins. “Aseptic” Napkins

**Cost only Six Cents a Dozen New,**

so that a NEW napkin can be used for each operation.

Send for a sample Napkin, which will be sent you free; or, better still, enclose 25 cents for **A Box of Fifty.**



FOR SALE AT ALL THE DEPOTS OF

**Consolidated Dental Manufacturing Company.**



(No. 257. Continued.)

## THE BARNES-SKINNER ELECTRIC DENTAL MALLET.

The advantages of electrical dental mallets over mechanical and automatic mallets and hand instruments are numerous. In the first place a filling can be done in about one-third the time required by any other method. Rapidity of operation is not obtained by sacrifice of good work. As a matter of fact, malleting by electricity accomplishes the most satisfactory and durable filling, the method being endorsed by prominent operators everywhere. It is a well-known fact that fillings in cavities with thin or frail walls can be made by the electric mallet with the minimum of danger, and the gold can be more evenly, thoroughly and rapidly condensed in all fillings and with less pain than by any other known method.

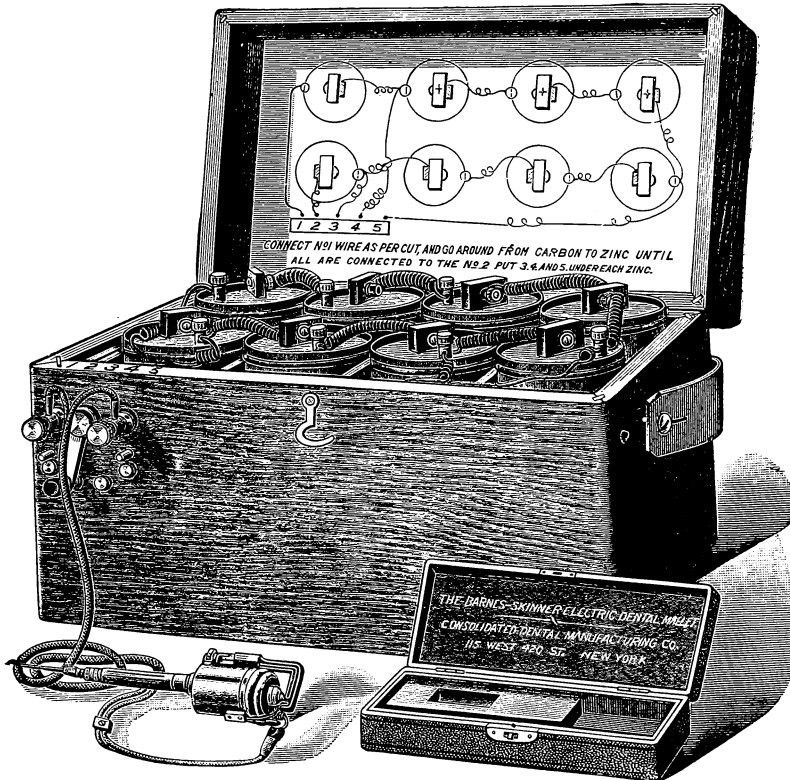


Fig. 2.

The advantages of the Barnes-Skinner Electric Dental Mallet are appreciated by all intelligent operators upon an observation of the instrument. Operating, as it does, upon a principle distinctly different from all other dental pluggers, it possesses all of the advantages ever before obtained and avoids the many disadvantages which in the past have tended to confine the most satisfactory manipulation of the electric mallet to the usage of only the most expert and skillful operators.

Simplicity of construction is one of the Barnes-Skinner Mallet's most important and apparent advantages. Formerly electric mallets were constructed only in a manner that caused a constant and continuous succession of blows whether or not the plugger point was in contact with the gold. To all practical purposes the Barnes-Skinner Mallet is the same as a hand instrument until the point is placed into contact with the gold. The blows are not produced until

### OPERATION.

slight pressure of the plugger point against the filling forces together the contact springs A and B. Then the circuit is closed, and blow rapidly succeeds blow so long as pressure is maintained, but ceases instantly the pressure is relaxed. Having, therefore, immediate control of the blow, the Barnes-Skinner Mallet can be satisfactorily used for fillings with gold possessing only the qualities and characteristics which hand instruments require.

## (No. 257. Continued.)

The Barnes-Skinner Mallet is constructed on the very best scientific principles. In order to obtain a sufficient amount of power to operate any electrical instrument with a small quantity of electricity two magnets are necessary. The Barnes-Skinner Mallet consumes the smallest amount of current by reason of the peculiar construction of its magnets. The two poles of its magnets permit the armature to come within 1-100 of an inch of its field. Considering that "Magnetism varies inversely as the square of the distance," it is proven that a small amount of current will do the required work. This well known principle has been applied to the Barnes-Skinner Mallet.

The electric armature is the hammer E, of sufficient size to absorb all magnetism. The hammer is held in position by a spring, but has no friction to overcome, being guided only by the part K, which holds the plugger point and passes through the centre of the instrument and the hammer E to the points of contact A and B. Pressure upon the plugger point forces this rod K against the contact spring B, closing the circuit at A. The rod K is insulated from the electric current by a small ivory point placed into the centre of the end of the rod which rests against the spring A. The contact points of the springs A and B are of platinum.

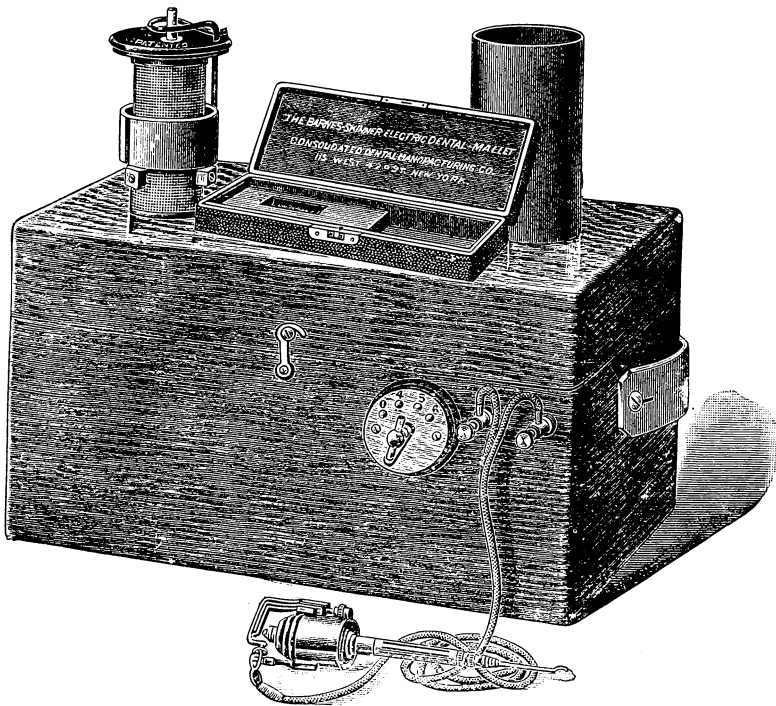


Fig. 3.

The only adjustment that this mallet requires is the regulation of the contact spring A by manipulation of the regulating wheel G, which directly controls the position of this spring. These parts A and B constitute practically all of the electrical working parts of the mallet. It will, therefore, be readily recognized how simple is their adjustment. These springs A and B

are well protected by the guard F, which guard also acts as one of the conductors of the current from the battery cord, receiving into its socket one of the ends of the swivel M. A "short circuit" is prevented by means of the insulated guard D. The battery cord is connected to the mallet by means of the swivel attachment shown, the ends of the swivel part closing into the sockets of the springs C and F.

The handle of the mallet is of hard rubber, with serrations as illustrated, and is of approved length. Some operators, however, preferring a longer handle, the part Q is furnished with each mallet. This part screws into the plugger point socket and increases the length of the handle three-quarters of an inch, and the extra part contains a socket which receives the plugger point same as the connection at K.

(No. 257. Continued.)

The workmanship of the Barnes-Skinner Mallet is perfect. Each and every part is manufactured to a standard gauge, and all parts are interchangeable. The metal parts are handsomely nickel-plated, with a satin finish which does not readily tarnish.

The Barnes-Skinner Electric Dental Mallet is made for operation by electrical current from any desired source. We illustrate and describe the three principal forms:

No. 257 A—The Barnes-Skinner Electric Dental Mallet, complete, with Dry Battery and Connections.

This outfit includes the electric mallet as described, a foot cord with swivel connection M and N, as illustrated, with special connection to six-foot battery cord, and eight-cell dry battery and case, as per Fig. 2. These cells, with ordinary usage, will last from six to twelve months, and when exhausted can be replaced at a nominal cost. The handsome polished oak case is furnished with stout leather carrying strap, as illustrated.

**PRICE, \$35.00.**

No. 257 B—The Barnes-Skinner Electric Dental Mallet, complete, with Six-Cell Gordon Fluid Battery.

This outfit is the same in all respects as No. 257 A, except that instead of the dry cells it is furnished with six cells of Gordon Fluid Battery, as illustrated in Fig. 3. These cells are more durable and, with periodical recharging, will last indefinitely. The elements for recharging can be obtained at slight cost. Complete directions accompany each battery.

**PRICE, \$45.00.**

No. 257 C—The Barnes-Skinner Electric Dental Mallet, complete, with Barnes-Skinner Rheostat for 110-volt Street Current Resistance.

This Rheostat is constructed in a manner that converts the 110-volt street current into a form like that obtained from an ordinary battery, and prevents all danger of shocks and short circuiting. It is furnished complete with connections, as illustrated in Fig. 4.

**PRICE, \$45.00.**

**EXTRA PARTS FOR THE BARNES-SKINNER ELECTRIC DENTAL MALLET.**

No. 257 Q—Part Q for Lengthening Mallet Handle.

No. 257 R—Mallet Cord with Swivel connection M and N.

No. 257 S—Six-foot Battery Cord.

No. 257 T—Cell for Dry Battery.

No. 257 U—Elements for Recharging Fluid Battery.

No. 257 V—Lamp for Rheostat.

Prices of Parts quoted on Application.

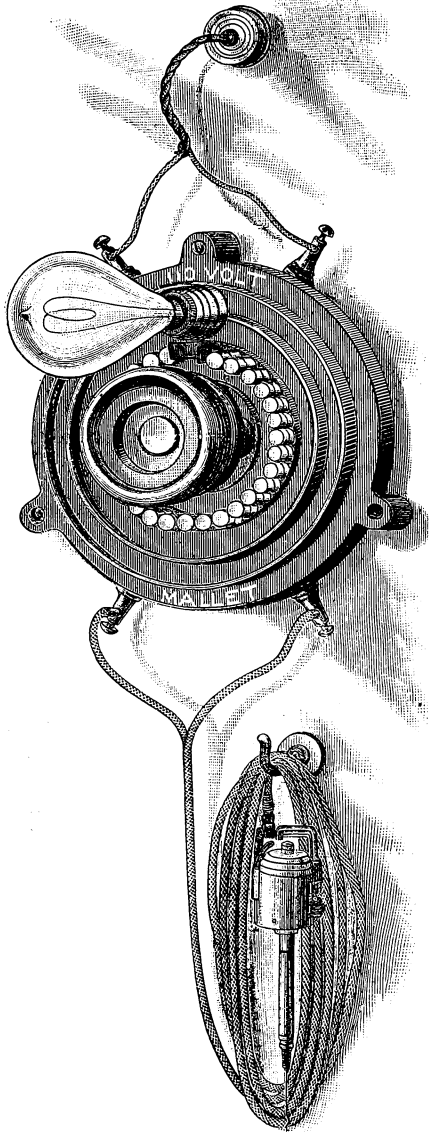
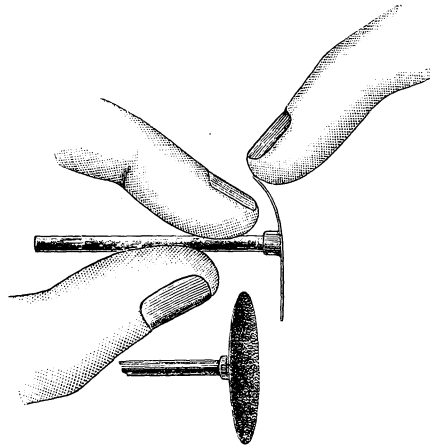


FIG. 4.

(No. 64.)

# LEAMING'S "VULCAN" CARBORUNDUM AND CORUNDUM WHEELS, DISKS AND POINTS.

FOR PLUG-FINISHING AND BRIDGE-WORKING.



No. 480.

These Wheels are made by a new process, rendering them very sharp and tough. They are practically unbreakable, and do not become gummed like ordinary corundum. The character of the binding material makes them so tough as to allow of remarkable thinness all the way through to the mandrel, thus rendering their use possible in places inaccessible with the old-fashioned wheels. Many operators use them as a substitute for the diamond, as they readily cut the enamel; and they can be used for preparing cavities in porcelain teeth.

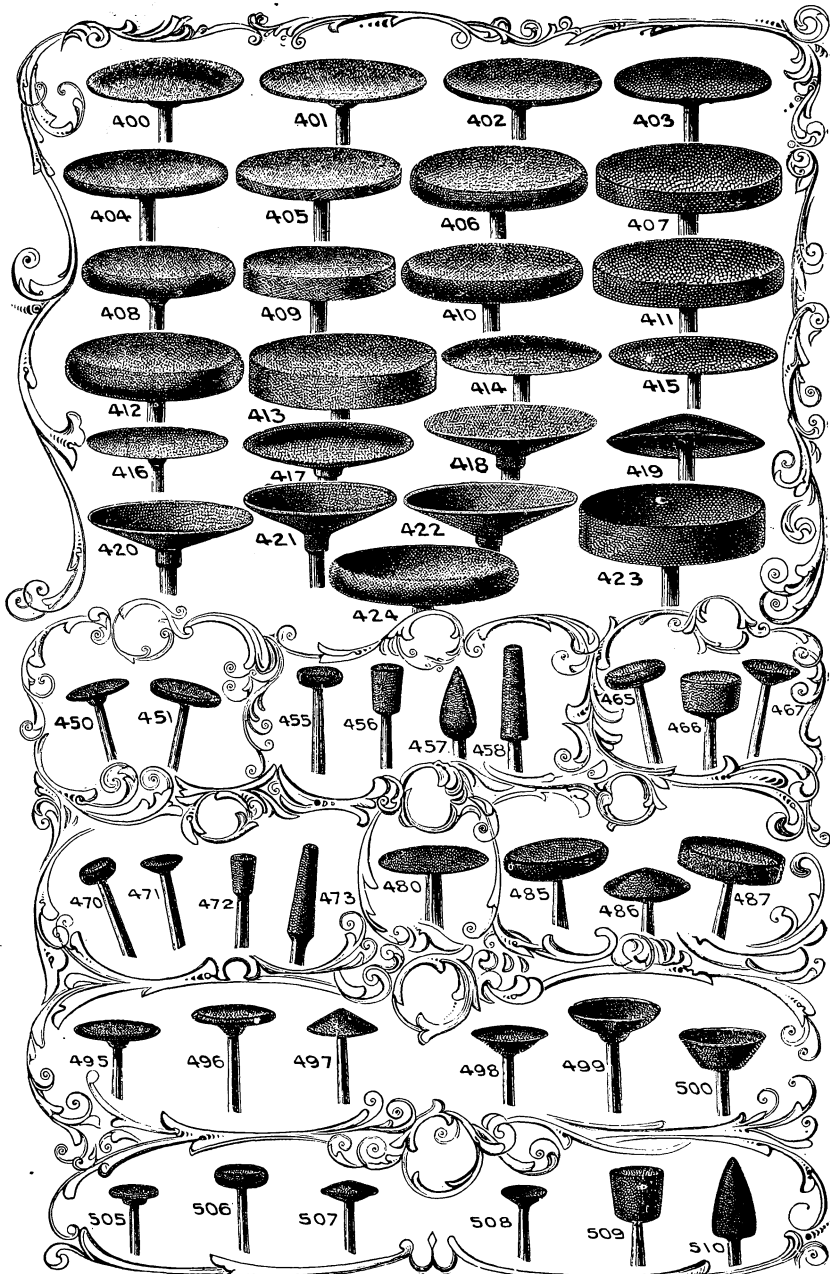
Each wheel is trued and securely mounted on plain mandrel for the dental engine while in the mould, and is guaranteed to run absolutely true.

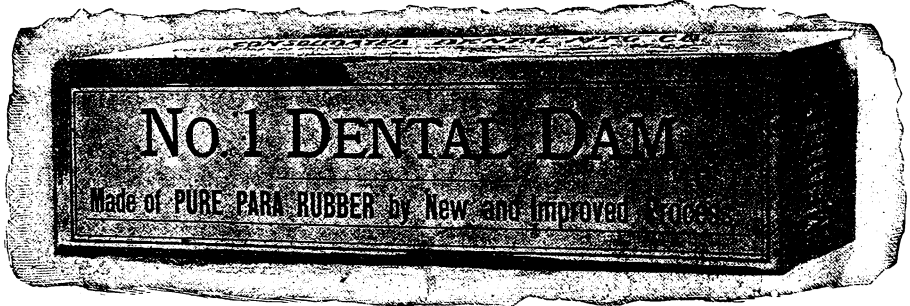
Attention is particularly called to No. 480 shown above. It is very thin and flexible, but tough and will bear a hard push edgewise. Intended for separating and polishing.

The Vulcan Disks and Thin wheels can be had "Safe-sided" if desired; and will be furnished either side smooth, as called for. Order by number.

PRICE, PER DOZEN,	-	-	-	\$2.00
" EACH,	=	=	=	.20

# LEAMING'S "VULCAN" CARBORUNDUM AND CORUNDUM WHEELS, DISKS AND POINTS.



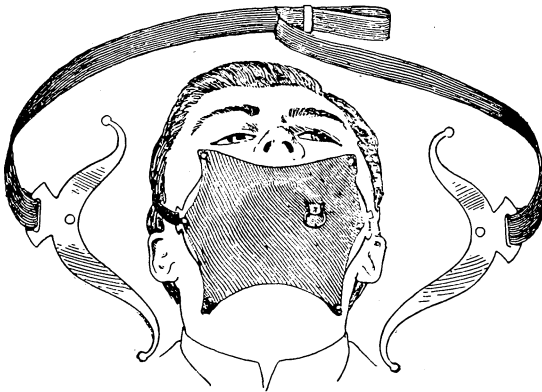
**DENTAL RUBBER DAM.****(No. 240.)****PUT UP IN DOLLAR ROLLS.**

This Dental Dam is made of only the best Para rubber, and by our process of vulcanization, it has very slight odor and retains its strength indefinitely. We sell it in convenient rolls, six or nine inches wide. The six inch roll is always sent unless the wide roll be specified.

A roll of thin Dam contains... 1296 square inches.

A roll of medium Dam contains 864 square inches.

A roll of thick Dam contains... 666 square inches.

**DR. HINKLEY'S RUBBER DAM HOLDER.***[Patented Feb. 2, 1897.]***(No. 241.)****A RUBBER DAM HOLDER  
THAT HOLDS.**

In adjusting the Holder, attach the upper ball of the face plate first, then the lower, and lastly take up the surplus rubber by attaching the center point, avoiding excess of pressure on the clamp by adjusting the head-piece loosely.

**PRICE, EACH, \$1.00.**

This Holder was especially designed to assist the operator in exposing to light obscure and inaccessible cavities in posterior teeth, the efficacy of which will be seen by a glance at the accompanying cut. In using the Holder for anterior teeth, use clamp on bicuspid.

**The Advantages of this Holder are:**

- 1st. It holds the dam firmly in the same position, independent of any change in the position of the head.
- 2d. It extends the cheeks and admits the light to obscure cavities in posterior teeth.
- 3d. It obviates the necessity of weights, and gives the operator the free use of both hands at all times.
- 4th. It costs no more than inferior makes, is more efficient, and requires only two-thirds of the amount of dam for its use.
- 5th. In short, it is a Perfect Rubber-dam Holder within itself.



# AINSWORTH

## RUBBER-DAM PUNCH.

THIS.....

### Rubber-Dam Punch

IS SO WELL KNOWN  
AS TO REQUIRE NO  
DESCRIPTION.



The hardened steel point  
cuts the Rubber-Dam  
against a die-plate, like-  
wise hardened steel.....

The die-plate has four  
holes, graduating in size.

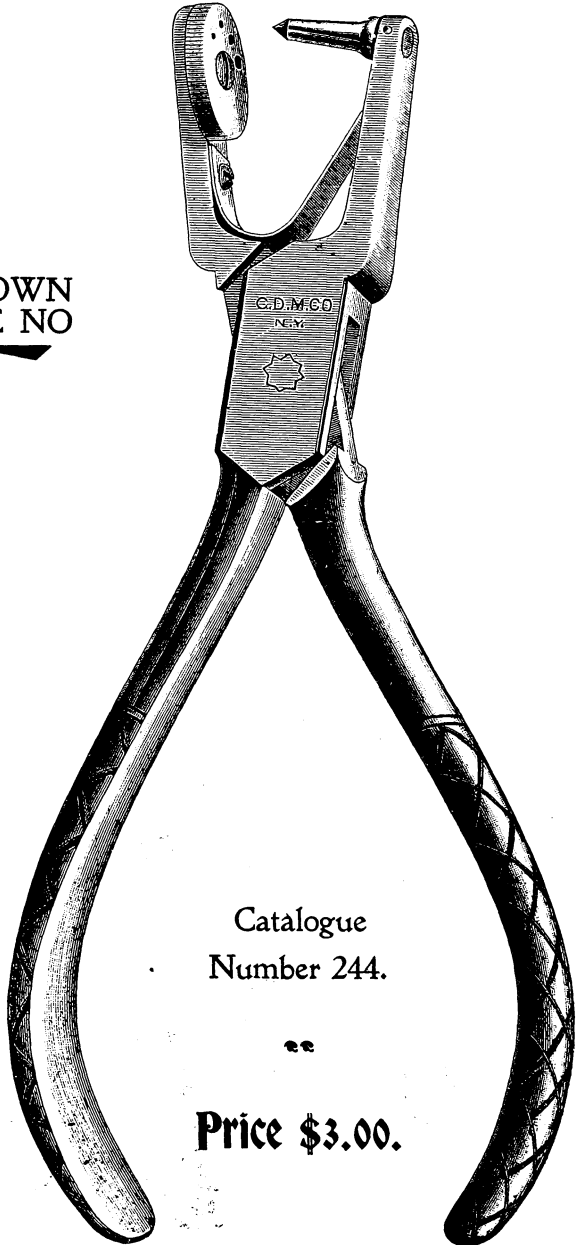


FOR....

### Satisfactory Work

These Punches must be  
made in the most care-  
ful manner.

That is the  
way ours  
are made.



Catalogue  
Number 244.

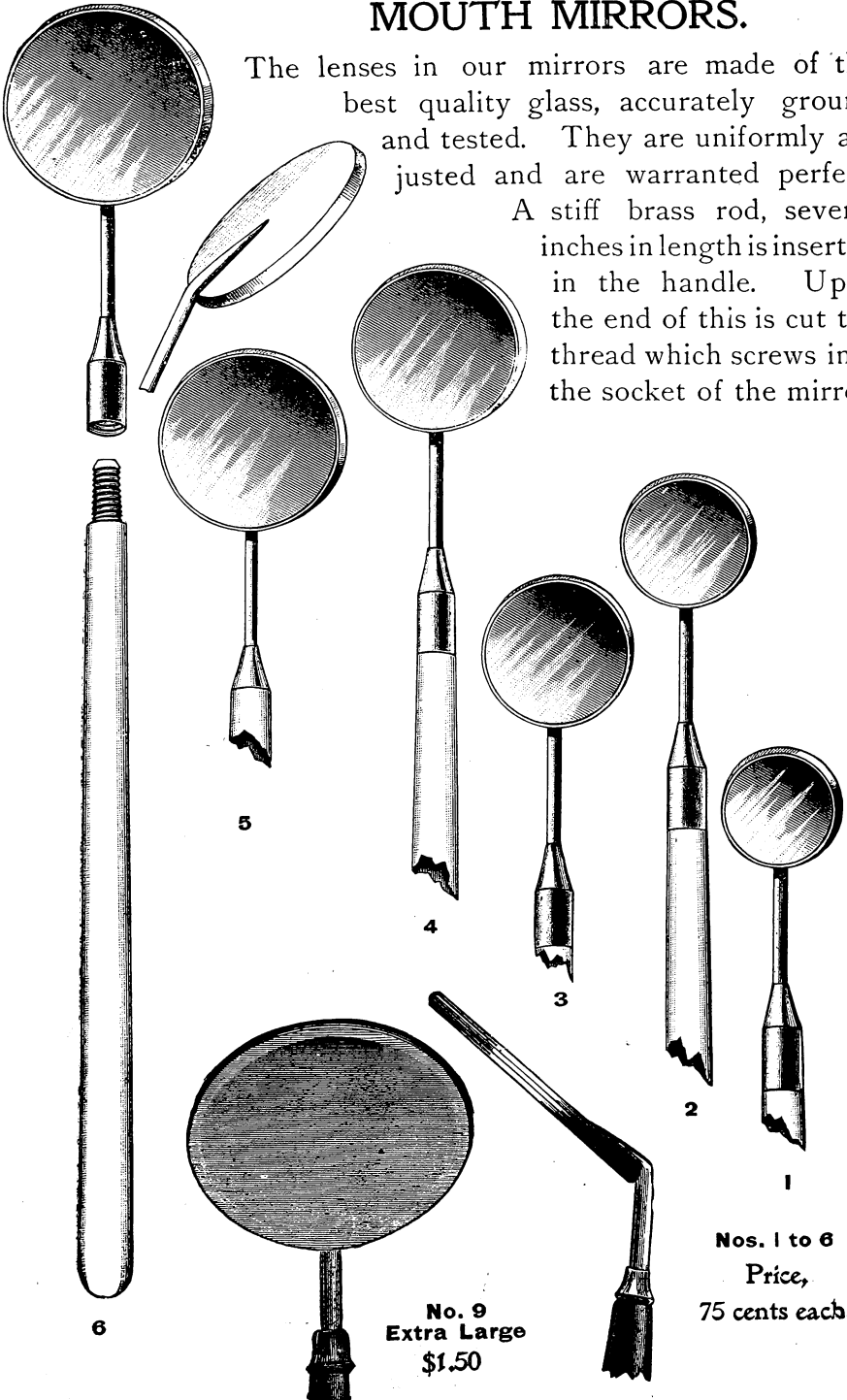
Price \$3.00.

(No. 151.)

## MOUTH MIRRORS.


The lenses in our mirrors are made of the best quality glass, accurately ground and tested. They are uniformly adjusted and are warranted perfect.

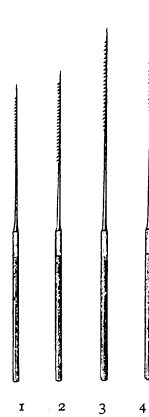
A stiff brass rod, several inches in length is inserted in the handle. Upon the end of this is cut the thread which screws into the socket of the mirror.



Nos. 1 to 6  
Price,  
75 cents each.

No. 9  
Extra Large  
\$1.50

ONE DOZEN  
  
 STEEL NERVE  
 BROACHES.  
 Finely Barbed and almost as Tough as Platinum.  
 MANUFACTURED BY  
**CONSOLIDATED DENTAL MFG. CO.**  
 115 WEST 42D STREET, NEW YORK.



# They Are Small.



Nerve Broaches are among the smallest instruments a dentist uses, but they have important tasks to perform. They must be all right, or they will be all wrong. There is no half way about it. Broaches are either good or bad—never both.

Good dentists want good Broaches. The best dentists want the best Broaches. No dentist wants bad ones. There is only one best.

There are some makes almost as good as Consolidated Dental Mfg. Co.'s Nerve Broaches, but the little difference in our favor is what makes the operator safe. The perfect tempering and barbing in our Broaches are revelations of the finest mechanism.

The reason why our Broaches are so good is because the man who makes them has been making Broaches all his life.

Every Dentist who buys our Broaches, and is disappointed in any way, is entitled to have his money refunded. No matter what the fault is—no matter whether we think his complaint is just—he can have his money back freely and instantly.

**CONSOLIDATED DENTAL MFG. CO.**

115 West 42d Street, New York.

# DR. D. J. McMILLEN'S SET OF "NON-COHESIVE" INSTRUMENTS.

Made from Patterns in Personal Use by Dr. McMillen.



(No. 275)

Not only are the qualities, preparation and manner of using non-cohesive gold different from the cohesive form but the instruments also, as well as the manner of using them. Of these Nos. 1 to 5 inclusive, are hand instruments, to be used when the force exerted is by hand pressure only. The handles are large, to allow a firm grasp of the instrument, and may be of any shape suitable to the operator, so long as they afford a firm grasp and are not too heavy. If the instruments are made entirely of steel they prove too heavy for comfort and that delicacy of touch which should be cultivated by the expert dentist.

Nos. 1 and 2 are the large and small wedge instruments, and are simply conical points of different sizes, bent to nearly a right angle, and are universal in their use, for either side, upper or lower.

Nos. 2, 3 and 4 are known as riveters, and have cylindrical points, squarely cut off and are lightly serrated.

Nos. 3 and 4 differ only in size and in the angle at which the points are bent. These are for lower teeth, either side. No. 5 is for upper teeth also, as may seem most convenient. The serrations should be light, simply to keep the instrument from slipping when force is exerted. Considerable force must be applied with these instruments, and if not somewhat serrated they slip and do injury to the soft tissues.

Nos. 6 to 11 inclusive, are mallet instruments, to be used when the force is largely applied by means of the ordinary condensing mallet. The handles are large enough to permit the necessary malleting without springing, slightly heavier than ordinary pluggers,

and of the same length. Nos. 6, 7 and 8 are foot pluggers and have no serrations whatever. They differ in size and width, No. 6 being quite small and No. 7 being broader and slightly longer. No. 8 is long and thin, for the use at the cervical margins of deep cavities, or for reaching between teeth from the buccal or lingual sides.

Nos. 9, 10 and 11 are condensing instruments, and are simply conical points with ends cut squarely off, without serrations. No. 9 represents a perfectly straight point. Nos. 10 and 11 the same shaped point, with the shank bent in bayonet form for convenience in reaching lower molars. More points like No. 9, but different diameters, may be added at the pleasure of the operator. No. 12 is gold roller.

This set of instruments may be increased by the operator, though the number shown is sufficient for all ordinary needs, and the "handy" dentist will be able to do nearly everything with five or six of the set. It should be borne in mind that these instruments are not heavy, clumsy things, but the points are about the size of ordinary points, and permit of the same delicacy of touch which is required to do fine work of any kind.

## PRICES.

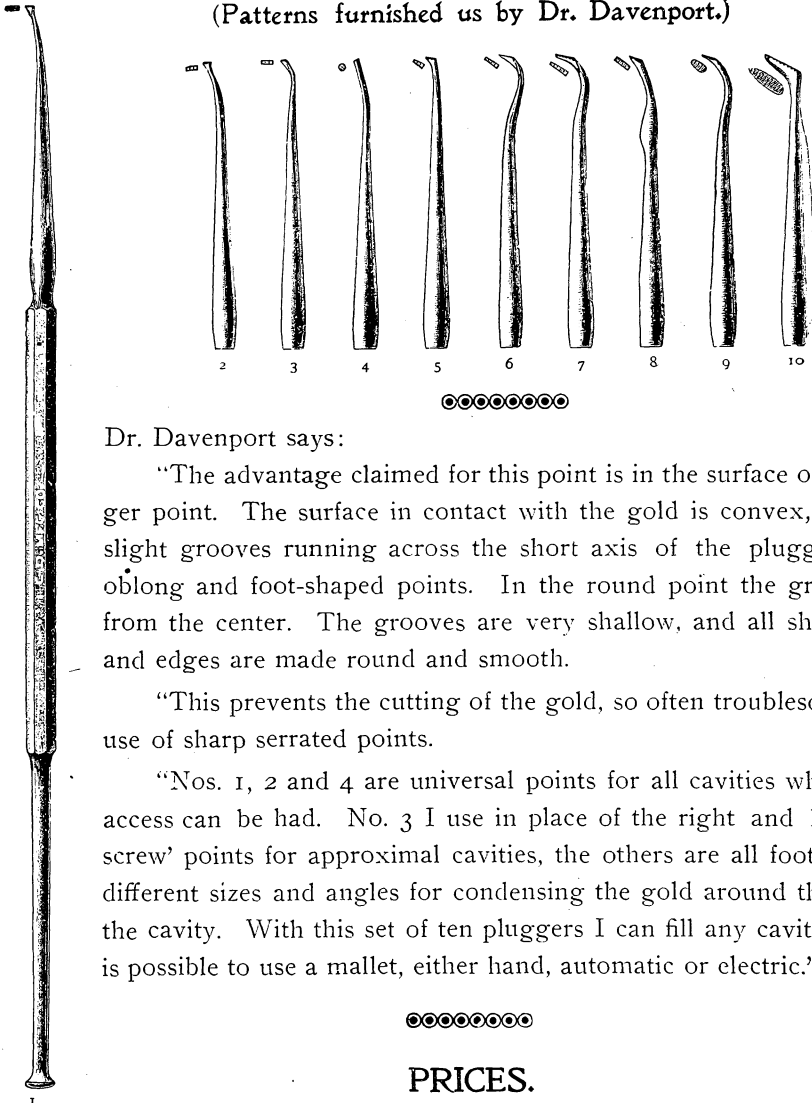
Complete Set with Handles, .....	\$7.75	Points No. 12, .....	\$0.20
Points Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, each, .....	35	Handles for Nos. 1, 2, 3, 4, 5, each, .....	.42
Points Nos. 10, 11, each, .....	.50	Handles for Nos. 6, 7, 8, 9, 10, 11, each, .....	.21
Handles for No. 12, each, .....	\$0.11		

D. J. McMILLEN.

(No. 272)

# DR. W. F. DAVENPORT'S SET OF PLUGGERS. ❧ ❧

(Patterns furnished us by Dr. Davenport.)



Dr. Davenport says:

"The advantage claimed for this point is in the surface of the plugger point. The surface in contact with the gold is convex, with very slight grooves running across the short axis of the plugger in the oblong and foot-shaped points. In the round point the grooves run from the center. The grooves are very shallow, and all sharp points and edges are made round and smooth.

"This prevents the cutting of the gold, so often troublesome in the use of sharp serrated points.

"Nos. 1, 2 and 4 are universal points for all cavities where direct access can be had. No. 3 I use in place of the right and left 'corkscrew' points for approximal cavities, the others are all foot points of different sizes and angles for condensing the gold around the edge of the cavity. With this set of ten pluggers I can fill any cavity where it is possible to use a mallet, either hand, automatic or electric."

## PRICES.

No. 272A. Smooth Mallet Handles—	
Complete Set.....	\$7.50
Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, each.....	.75
No. 10, each.....	1.00
No. 272B. Points for Socket Handles—	
No. 272C. Points for Automatic Mallets—	
Complete Set.....	6.50
Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, each.....	.65
No. 10, each.....	.90

# PRESCRIBE LISTERINE

FOR PATIENTS WEARING  
BRIDGE WORK OR DENTURES

AND AS A GENERAL

Antiseptic and Prophylactic Wash  
For the Mouth and Teeth . . . .



## LISTERINE

Is kept in stock by leading dealers in drugs everywhere, but in consequence of the prevalence of the SUBSTITUTION EVIL we earnestly request DENTAL PRACTITIONERS to PRESCRIBE LISTERINE IN THE ORIGINAL PACKAGE.



LISTERINE is invaluable for the care and preservation of the teeth. It promptly destroys all odors emanating from diseased gums and teeth, and imparts to the mucous surfaces a sense of cleanliness and purification; used after eating acid fruit, etc., it restores the alkaline condition of the mouth necessary for the welfare of the teeth, and employed systematically it will retard decay and tend to keep the teeth and gums in a healthy state. LISTERINE is valuable for the purification of artificial dentures and for the treatment of all soreness of the oral cavity resulting from their use. Patients wearing bridge work should constantly employ a LISTERINE wash of agreeable strength.

LISTERINE is used in various degrees of dilution; one to two ounces of LISTERINE to a pint of water will be found sufficiently powerful for the general care of the deciduous teeth of children, whilst a solution composed of one part LISTERINE and three parts water will be found of agreeable and thoroughly efficient strength for employment upon the brush and as a daily wash for free use in the oral cavity, in the care and preservation of the permanent teeth.



LITERATURE DESCRIPTIVE OF LISTERINE MAY BE  
HAD UPON APPLICATION TO THE MANUFACTURERS

## LAMBERT PHARMACAL COMPANY,

.. ST. LOUIS, MO. ....

# WANTS. FOR SALE ETC.

NOTE.—Terms for advertising in this department of future issues of "ITEMS OF INTEREST" are ten cents per word, including captions, "Wanted," "For Sale," etc., and address. Initials charged as words. Advertisements should reach us by the 20th of each month to insure insertion in following month's issue. Advertisements payable in advance.

CONSOLIDATED DENTAL MFG. CO.,  
115 W. 42d St., New York, N. Y.

418—WANTED.—Position by graduate; four years' experience; good extractor and all-around man. Address A. W. SOULE, Millbury, Mass.

419 — WANTED. — Traveling salesmen acquainted with the dental and medical profession to handle our "Espersen Dental and Surgical Lamp," either direct or as a side line; large profits for good men can be made from this article. For full particulars address THE PACIFIC ELECTRIC COMPANY, No. 120 Main St., La Crosse, Wis.

420—WANTED. — First-class laboratory man, licensed for New York. "UNIVERSITY," care of "Items of Interest," No. 115 West 42d St., New York.

421—WANTED.—Position by graduate; five years' experience. Address "X.," Jeffersontown, Ky.

422—Skilled operator (Harvard Diploma, 1893), wants assistantship or charge of office. Address "M.A.," care of "Items of Interest," No. 115 West 42d St., New York.

423—WANTED.—Good all-around young man. "M.B.," care of "Items of Interest," No. 115 West 42d St., New York.

424—FOR SALE.—Office in Pennsylvania town, 3,000. "M.C.," care of "Items of Interest," No. 115 West 42d St., New York.

425—Lady wants position as assistant; experienced; speaks German and English. "M.D.," care of "Items of Interest," No. 115 West 42d St., New York.

426—WANTED.—Position in dental office with view of buying interest; Ohio, Indiana, Illinois, Missouri or Kansas considered. Address "M.E.," care of "Items of Interest," No. 115 West 42d St., New York.

427—Practice \$5,000 annually; two outfits; established ten years; population, 20,000; three other younger offices; big bargain for cash. Address "A.B.C.W.," care of Consolidated Dental Mfg. Co., No. 78 State St., Chicago, Ill.

428—FOR SALE.—Leading practice, established 18 years in best mining town in United States. LOLO D. SUMNER, Galena, Kansas.

429—FOR SALE.—A large, first-class practice, established 16 years; cause, health; \$1,000 cash takes it. "M.," care of Edmund V. Graves, New York Life Building, St. Paul, Minn.

430—FOR SALE.—Long established advertising practice near Philadelphia; good business. Address "M.F.," care of "Items of Interest," No. 115 West 42d St., New York.

431—WANTED.—Position by lady graduate. Address "COMPETENT," care of "Items of Interest," No. 115 West 42d St., New York.

432—WANTED. — Situation; experienced; have outfit. Dr. E. COVER, Harrisburgh, Pa.

433—FOR SALE.—One-half interest in established advertising dental office. Address "M.G.," care of "Items of Interest," No. 115 West 42d St., New York.

434—FOR SALE.—Dental office, Spartansburg, S. C.; well equipped and located; population 12,000; 40 per cent. of manufacturing of State in this county. Address W. L. SEIGLER, Gainesville, Fla.

(No. 595.)

DR. CHAS. A. DAVIS' IMPROVED CROSS-BAR VULCANIZER.

Patented March 20, 1894.

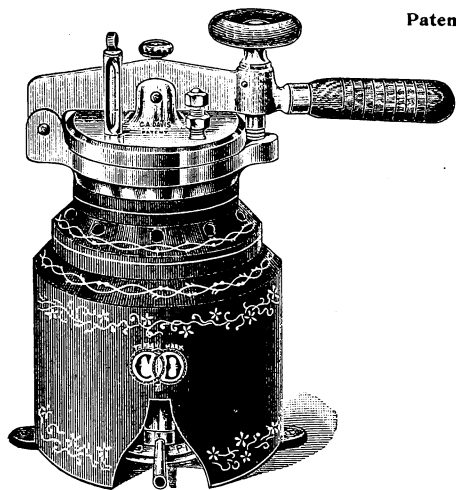


Fig. 1.

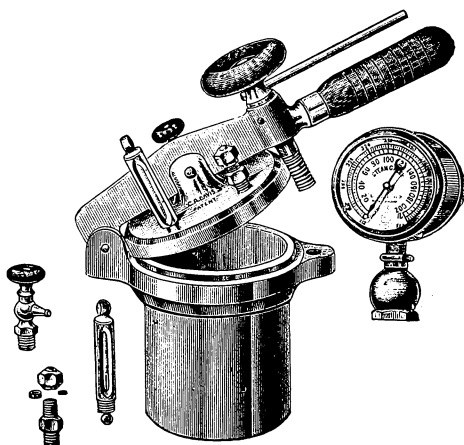


Fig. 2.

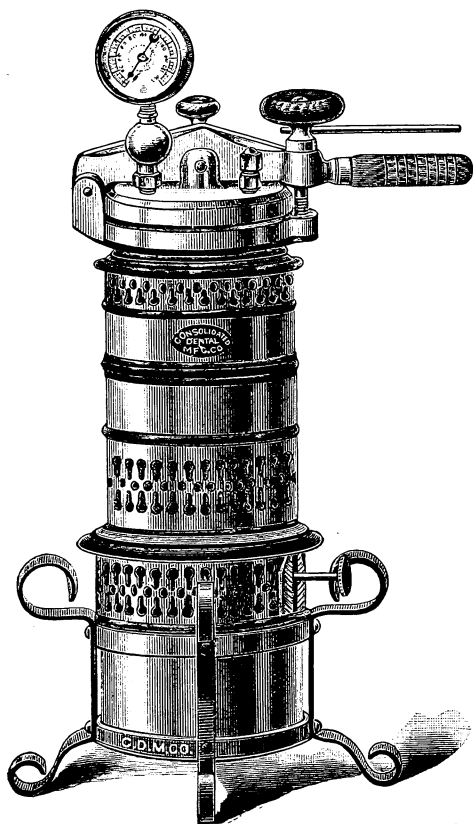


Fig. 3.

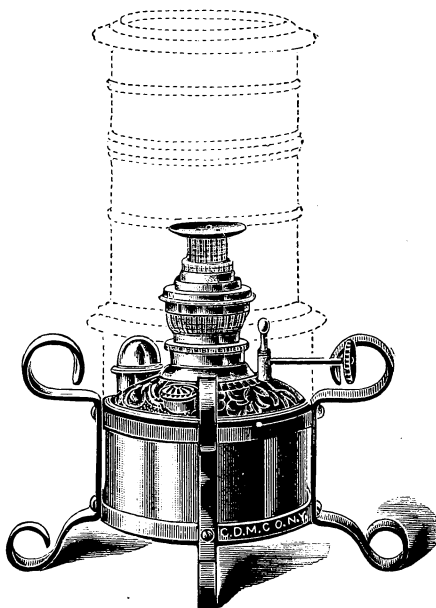


Fig. 4.



## DR. CHAS. A. DAVIS' IMPROVED CROSS-BAR VULCANIZER.

The advantages in the use of this New and Improved Vulcanizer are many. No wrench is required in its use. It is simple, compact, well-made, durable and handsomely finished. It is constructed on scientific and best mechanical principles throughout.

The Vulcanizer is opened by simply unscrewing the hand wheel and lifting the handle attached to cross-bar, as shown in Fig. 2. In unscrewing the hand wheel, the two last threads effectively lift the lid from the boiler, thereby avoiding the necessity of prying them apart, which is the disadvantage of other cross-bar vulcanizers. In closing, it is only necessary to turn down the wooden hand wheel, which securely fastens the top to the boiler, making a perfectly steam-tight joint. If greater pressure is required, the small lever accompanying each vulcanizer may be inserted in the hand wheel screw as illustrated.

The extra heavy seamless boiler and the collar to which the cross-bar is attached are made all in one piece, so that the disadvantages of having the collar brazed upon the pot, offering opportunity for weak joints or leakage, is entirely overcome.

The cross-bar is made of extremely hard gun metal, and constructed, as will be seen, on scientific principles, the great strain or pressure being exerted against the center of the bar, which is heavily reinforced at this point.

The carbon or graphite packing is moulded instead of being cut into strips, and will last for years without being renewed.

The wooden handle of the cross-bar is made of polished mahogany of suitable size, and is securely fastened to the cross-bar by means of a bolt and blind nut, which is countersunk within the extreme end of the handle, making it impossible to burn the hands while grasping the same. The hand wheel screw and the tapered pins which hold the bar to the collar, and lid to bar are of the best cast steel. The hand wheel is securely fastened to the screw, and can be operated by the dentist without further protection from the heat.

The Vulcanizer is furnished with a neatly nickel-plated substantial blow-off valve, a safety valve and an improved thermometer, having the degrees engraved upon the glass tube, as shown in Fig. 2. The thermometer tube is enclosed in a metal case of new and improved design, which affords great protection from breakage.

When desired, a handsome steam gauge is furnished at a slight extra charge.

The inside diameter of the boiler is  $4\frac{1}{4}$  inches, being of sufficient width to take the largest flasks; is made both for 2 flasks and 3 flasks, and is of sufficient depth to admit the Donham spring.

Fig. 1, on opposite page, shows the Vulcanizer complete for gas with blow-off valve, safety valve and thermometer. Fig. 2 illustrates the boiler removed from jacket, showing manner of operation.

We wish to call particular attention to the unique kerosene arrangement for this Vulcanizer, as illustrated in Figs. 3 and 4. This apparatus consists of an improved oil-burning lamp, operating upon the standard center-draught principle. It gives intense heat, and the flame can be regulated to a nicety. The oil reservoir is furnished with an indicator, showing when it is empty and when it is full, which is an advantage when refilling same with kerosene. The kerosene jacket is made of sheet iron, with isinglass trimmings. The whole arrangement for kerosene represents a long step in advance of anything ever yet offered the dentist who has not the facility of gas, and will appeal to every one who has experienced the difficulties with the old style burners.

When ordering the Davis Improved Cross-Bar Vulcanizer, indicate the style wanted, according to the following specifications:

No. 595 A-2-case	Vulcanizer,	with	Thermometer	for	Gas	.....	\$18.00
No. 595 B-3	"	"	"	"	"	.....	20.00
No. 595 C-2	"	"	"	"	Kerosene	..	18.00
No. 595 D-3	"	"	"	"	"	.....	20.00
No. 595 E-2	"	"	"	Steam Gauge	"	Gas	.....
No. 595 F-3	"	"	"	"	"	.....	24.00
No. 595 G-2	"	"	"	"	Kerosene	..	22.00
No. 595 H-3	"	"	"	"	"	.....	24.00

Provision is made for attaching any gas and time regulator desired.

All parts of the Davis Vulcanizer are interchangeable and can be furnished promptly upon receipt of order.

## IMPROVE YOUR BRIDGE WORK

show, it plates so that it can never be noticed.

**Gold Plate your Brass Samples.  
Nickel Plate your own instruments.**

We send everything complete for \$5.00, which includes 1 quart of gold solution, ½ gallon of nickel solution, and battery complete. You are ready for work in five minutes after receiving outfit. Full instructions for plating with each outfit. Cash must accompany order, or sent C. O. D.

•• The Gold Plating is Unexcelled ••

**Electro Plating** has come to stay. You cannot afford to be without a plating outfit. By plating with pure gold your Bridge Work will always remain one bright rich color. Should platinum

**Gold Plate your Regulating Appliances.  
The Gold Solution will last indefinitely.**

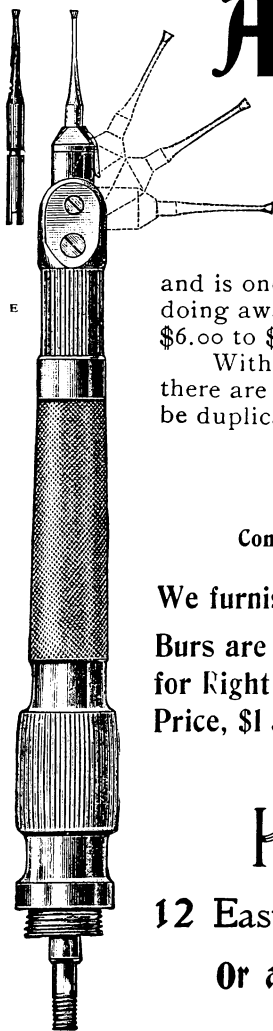
**The Electro Mfg. Co.**

109½ N. High Street,  
Columbus, Ohio.

# SHAW'S



## Angular Hand Piece



The Angles of this Hand Piece are universal. It has four different angles, and it operates just as well in a direct position as it does in any of the different angles. It is one of the most durable Hand Pieces on the market, on account of its simplicity.

It can be attached to other Hand Pieces, if so desired, and is one of the cheapest, as it has all the different angles, thus doing away with an extra Right Angle; and a saving of from \$6.00 to \$10.00, besides the having to buy two styles of Burs.

With ordinary use this Hand Piece will last ten years, as there are only **four parts that can wear**, and any of these parts can be duplicated at any time at a nominal cost.

**HAND PIECE, - \$12.00**

Connections for No. 7 S. S. W., or Slip Joint, \$2.00 Extra.

We furnish the best Bur that is manufactured.

Burs are put up 1 doz. in a Box, 3 short ones for Right Angles and 9 longer ones for direct.

Price, \$1 50 per doz. or \$15.00 per gross.

## H. D. HANWAY,

12 East 23d Street,

NEW YORK.

Or any Branch of Consolidated Dental Mfg. Co.

OFFICE OF

## S. H. REYNOLDS & SONS.

The copartnership between Mr. John Hood and myself (S. H. Reynolds) under the firm name of Hood & Reynolds, Boston, Mass., has been dissolved after an existence of nearly thirty years. During that time I had exclusive charge of the refining, preparing and beating of the GOLD FOILS manufactured by the above named firm.

I have associated with me my two sons and will continue the manufacture of all of the gold specialties formerly made by the firm of Hood & Reynolds. Thirty years of practical experience is a guarantee of first-class goods. We manufacture gold foils, cylinders, solders, and amalgams. Foil scraps, gold scraps, and filings refined and bought. Returns for scraps sent us promptly made.

A share of your patronage is solicited.

In order that my Gold Cylinders may be tried we shall, for a limited time, place on sale all numbers of Cylinders, put up in 15 gr. bottles, which we sell you at the price of \$1.00. CASH MUST ACCOMPANY ALL ORDERS.

Yours very truly,

S. H. REYNOLDS,

Of the late firm of Hood & Reynolds.



## REDUCTION IN THE PRICE OF FOILS

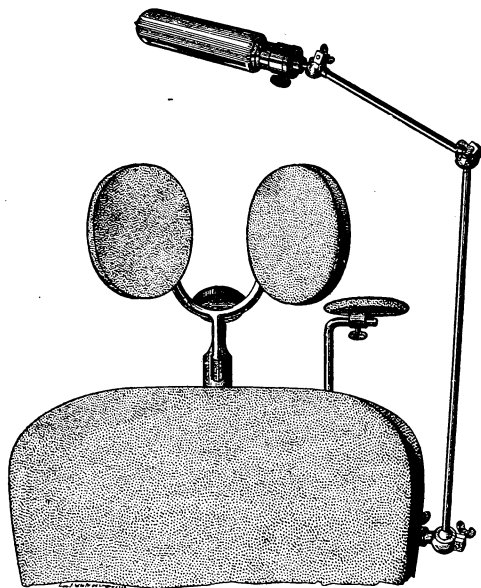
Gold Foils of all kinds, \$3.50 per 1/8 oz.

Prices of Cylinders, 1/8 oz., \$4.00; 1/2 oz., \$15.00; 1 oz., \$29.00.

My Goods can be obtained of any of the reliable non-combination houses or of

S. H. REYNOLDS & SONS,  
HYDE PARK, MASS.

When  
Clouds  
Cover  
The  
Sun



## The Ball Joint Operating Lamp

puts a powerful light in the right place, and retains it where you want it. ***Never in the way.*** You cannot afford to waste time by stopping an operation or putting off an appointment if ***Daylight Gets Dim...***



## The Practical Rubber Dam Holder...

Superior to all. Price suits anybody. Has a flat buckle, which is simply perfection and cannot hurt the head. Order from your dealer or direct. **Money Back If You Want It.**



# O. B. BACHMAN CO.

Equitable Bldg., Des Moines, Iowa

# A Fountain Spittoon

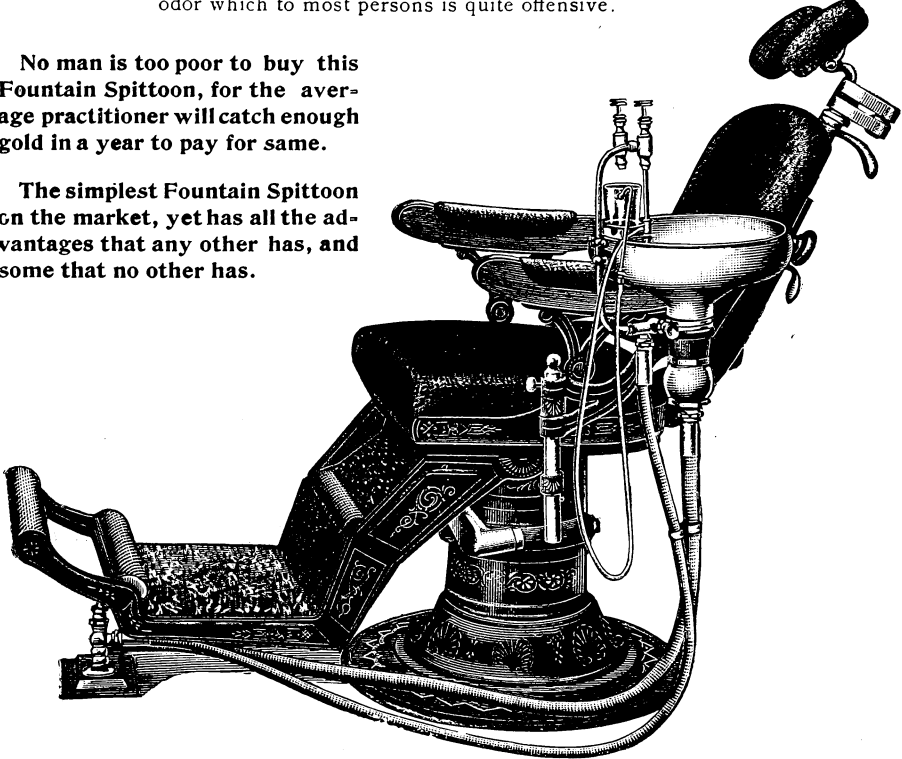


is to-day as much a necessity in every well-equipped dental office as clean towels or napkins. There is only one reason why you should not have one, and that is a lack of running water.

There is nothing more offensive in a dental office than the ordinary cuspidor, for no matter how clean it is kept, it will at least emit a medicinal odor which to most persons is quite offensive.

**No man is too poor to buy this Fountain Spittoon, for the average practitioner will catch enough gold in a year to pay for same.**

**The simplest Fountain Spittoon on the market, yet has all the advantages that any other has, and some that no other has.**



**We claim to have the best Fountain Spittoon in the market, regardless of price, and the following are some of our reasons:**

1 The bowl is made of stamped steel, porcelain lined inside and out, will not rust, tarnish or break, and is easily kept clean.

2 **There is no center-piece to catch blood or saliva**, the water coming in over the edge of a nickel-plated disk, which fits in the bottom of the bowl.

3 After once regulating the flow of water by the little cock under the bowl, **it cannot throw water out of the bowl or run over**, no matter how much pressure may be on.

4 Has a detachable glass holder; can be taken off and polished.

5 A combination gold and gas trap obviat-

ing the necessity of placing gas trap under the floor.

6 **Has no movable parts that can wear out.** It also has the regular water faucet and improved saliva ejector, best quality silk-covered tubing

7 All metal parts nicked and enameled, ready for attachment to White's Pedal Lever, Wilkerson or Columbia Dental Chairs. We make an especial stand for spittoon for five dollars extra.

8 Every Spittoon is put up and tried before being sent out; all that you will have to do is to attach to chair and floor piece.

FOR SALE BY

**The Blair Fountain Spittoon Co.,** 410 West Chestnut Street,  
LOUISVILLE, KY.  
**and The Consolidated Dental Mfg. Co.**

# DENTISTS,

**PROTECT YOURSELVES BY KEEPING A COMPLETE  
RECORD OF EVERY SERVICE RENDERED . . . .**

There are over 30,000 Dentists in the United States, and the testimonials and opinions of the best men in the Profession to-day are that the

## FRANK J. TRIGGS SYSTEM OF DENTAL CHARTS

is the best known method now on the market for keeping a complete record of every service rendered each patient.

SIMPLE,  
COMPACT,  
INEXPENSIVE.



Used and  
Endorsed  
by the  
Leading Men  
of the  
Profession.



No Ledger.  
No Cash.  
No Journal.



You Can Save  
Time and  
Money  
by Using  
This System.



No posting of old charges or memoranda. You have everything on one Chart, no matter how much or how little work was performed, and if done one day or five years ago. You can, with this system, put your finger upon any patient's Chart, in **ONE MINUTE**, and on that Chart you have the number of appointments, times, fees, etc; when and how the account was paid, and every cavity marked just as in the patient's mouth.

**STUDENT'S CASE, \$5.00. PRICES, \$8.00, \$10.00 and \$12.00.**

Cases contain 300 Charts, 3 sets of Indexes and Cash Account Cards, are handsome and well made and have lock and 2 keys.

Write for samples and further information to

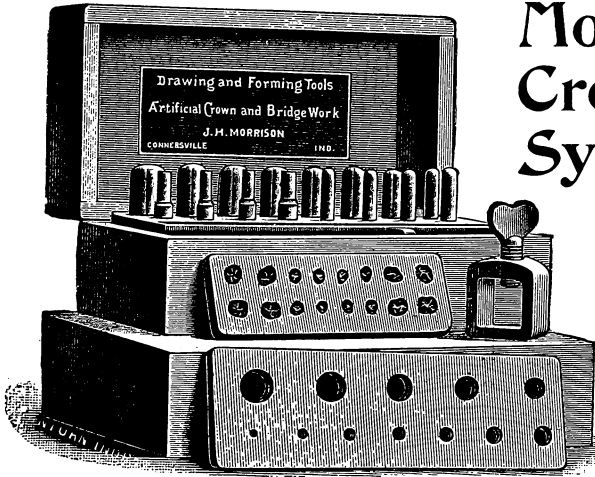
## ARTHUR, MOUNTAIN & COMPANY,

Sole Manufacturers,

47 East 18th Street, . . . . New York.

# HASKELL POST-GRADUATE SCHOOL OF PROSTHETIC DENTISTRY. } 92 State St., CHICAGO.

Everything pertaining to Prosthetic Dentistry taught to each student INDIVIDUALLY in detail, by Drs. Haskell and Yant.



## Morrison's Crowning System

A most practical and simple method of making seamless cap crowns, seamless caps, collars and shells, for all forms of crown- and bridge-work. Cuspid and incisor crowns easily made of absolutely perfect form.

A Seamless Contour Crown for any molar or bicuspid can be made by any one of ordinary skill in FIVE MINUTES.

Price, complete, \$16.00.

May be ordered of any dental depot, or of the Manufacturer.

J. H. Morrison, Connorsville, Ind.

BEST AND SAFEST.

# ALVATUNDER

FOR PAINLESS EXTRACTION.

In use over six years. References from any part of the country. One bottle will convince you that it is **the Best and Safest**—no matter what you are using.

PRICES: 75 cents per oz., or 2 ozs. (by mail) \$1.50; 10 ozs. for \$5.00 (by express.)

With the first \$5.00 order we will give you our large guard syringe.

## OUR SPECIAL OFFERS:

Large Guard hypo Syringe (same as advertised as \$3.00) with two needles and two ounces of ALVATUNDER, - - - - - \$2.00

All Metal Syringe (best made) with needles and all complete in case (needles either straight or curved), with two ounces of ALVATUNDER, - - - - - \$3.00

Cash to accompany order or goods sent C. O. D.

OUR LARGE GUARD SYRINGE HAS THE NEW INTERCHANGEABLE PLUNGER.

Write us and we will tell you about the composition of ALVATUNDER.

Address **THE ALVATUNDER MFG. CO.,** Valentine Building, TOLEDO, OHIO.

### AGENCIES:

New York City, Gustav Scharman, 1501 Broadway.  
Philadelphia, Sollers & Eastwood, 1228 Filbert St.  
Baltimore, Vose Mfg. Co., St. Paul and Fawcett Sts.  
Boston, Mass., James T. Magrath & Co., 125 Tremont St.

Minneapolis, Minn., Lee Hunt & Co., 405 Syndicate Arcade.  
San Francisco, Cal., Dr. W. Z. King, Mgr. C. D. M. Co., Western Agent, Chronicle Bldg.  
Buffalo, N. Y., Consolidated Dental Mfg. Co.; Weller Dental Supply Co.; Agents, 550-552 Main St.

Cleveland, Consolidated Dental Mfg. Co., Weyant & Johnson, 106 Euclid Ave.; Cleveland Dental Mfg. Co., Arcade Bldg.; U. S. Dental Mfg. Co., 206 Starkweather Ave.  
Austin, Tex., James Downie, Texas Dental Depot.

## Iodo-Formagen Cement

Is the Latest and Most Valuable Preparation for PAINLESS Treatment of Irritated Pulp.

In all cases of Pulpitis (pulp covered or exposed) this Cement gives an UTTERLY SURPRISING SUCCESS and has even been applied in light cases of Periostitis.

Indorsed by all leading Dentists in Germany and imported on account of its

### Phenomenal Success.

We beg the Dental Profession to give it a fair trial.

Price per Trial Package, - \$1.00

—One-half portion.

Price per Regular Package, \$2.00

Directions with each Package.

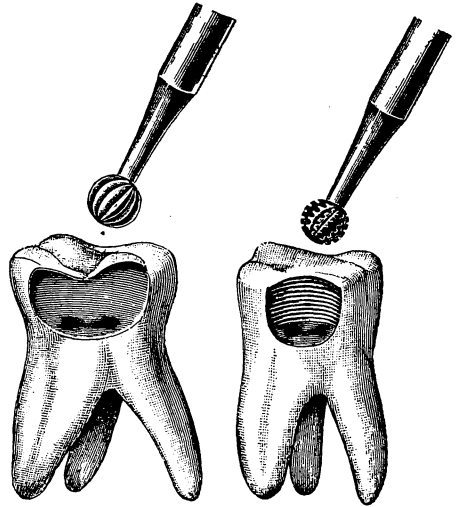
**GUSTAV SCHARMANN,**

1591 Broadway,

New York.

Sole Importer and Agent in U. S. for

E. SIMONIS, BERLIN, GERMANY.



"HAVE you noticed the difference in the cutting qualities of the cross-cut burs and the old style single-cut burs?"

"If you have not used any of the cross-cut burs send for a sample dozen - it will well repay you."

**Reduced Price, \$2.25 per Dozen.**

State Hand Piece, whether straight or right angle.

**GUSTAV SCHARMANN,**

1591 BROADWAY, N. Y. CITY,

Importer and Sole Agent for **Arthur Meisinger's**  
**Dental Instruments.** Factory, DUSSELDORF.

# Wise Dentists

know that it pays them when writing to our advertisers to say they saw the announcement in "Items of Interest." That is why the advertisers study to offer attractive inducements, knowing by this method that they reach the most intelligent members of the profession quickly and while the subject is interesting.

By studying "Items of Interest" advertising pages, wise dentists

# Profit.



"The Prophylactic is the BEST Tooth Brush made. It cleans best—it lasts longest—it is the best friend of the dentist. It keeps his work in good condition.

# Do You Prescribe the Prophylactic Tooth Brush?



☒ The article which is checked is the one wanted.

## Prophylactic Tooth Brush.

Bristles, Soft Texture, .....

Bristles, Medium Texture, .....

Bristles, Hard Texture, .....

CHILD'S SIZE Prophylactic, .....

FLORENCE DENTAL PLATE BRUSH, .....

For Artificial Teeth Only.

Dr.....

FLORENCE MFG. CO., MAKERS, FLORENCE, MASS.

Shall we send you prescription blanks? A postal card request **will bring you full information. Florence Mfg. Co., Florence, Mass.** You cannot thoroughly clean a Dental Plate with an ordinary tooth brush. You must use the Florence Dental Plate Brush. It resulted from experience."

Very truly yours,

FLORENCE MFG. CO.

# ODONTUNDER

Over Six Years' Standing Without a Single Fatality.

WRITE FOR OUR SPECIAL TERMS.

**ODONTUNDER IS  
GUARANTEED TO GIVE  
PERFECT SATISFACTION.**

**RECENT TESTIMONIALS.**

BROOKHAVEN, MISS., March 11, '97.  
ODONTUNDER MFG. CO. GENTLEMEN: Please send  
us ten ounces more of your Odontunder. It is the only thing  
yet. People come 40 miles to get their teeth extracted with  
"Thunder," as they persist in calling it. Respectfully,  
McNAIR & CARD.



LA SUERER, MINN., Feb. 3, 1896.  
ODONTUNDER MFG. CO. GENTS: Enclosed please find P. O. money order for \$10, for which please send  
me ten ounces of Odontunder. It is the best anæsthetic I have ever used; have extracted for different persons  
as high as 23 teeth at a single sitting. Truly,  
DR. M. P. SALISBURY.

So generally is Odontunder used that we guarantee to send you the name of some friend or classmate who is  
using it, with whom you can correspond.

**Single Bottles, 2 ozs., \$2, by Express. Three Bottles, 6 ozs., \$5, by Express.**  
**Six Bottles, 12 ozs., \$10, Express prepaid.**

ODONTUNDER WILL NOT DETERIORATE. EVERY BOTTLE GUARANTEED.  
CASH TO ACCOMPANY ORDER OR GOODS SENT C. O. D.

REFERENCES: Commercial Reports, Fredonia National Bank.

**Odontunder Manufacturing Co., FREDONIA, N. Y.**

## Crown- and Bridge-Workers. ❀ ❀

**I** AM prepared to give thorough instruction to dentists  
wishing to perfect themselves in practical crown- and  
bridge-work.



Realizing a demand for well-made show pieces of bridge-  
work, I can supply the profession with the same, in any  
form, from single crowns to full mounted models; also plates  
of all kinds.

**For Particulars and Prices,**

Address

**H. W. Northrop, D.D.S., 510 Fifth Ave., New York.**

## Platinoid A Substitute for Platina.

**FUSES AT 26.00° FAHRENHEIT.  
22KT. GOLD SOLDER CAN BE USED.  
PINS AND SCREW POSTS FOR CROWNS.**

**Three pieces three inches square ASSORTED \$1.00**  
**GAUGES for Crown- and Bridge-Work . .**

ASK YOUR DEALER  
OR SEND TO

**MANHATTAN DENTAL CO.,**

**745 SIXTH AVENUE, NEW YORK**



# Schieffelin & Co., New York

## Bensolyptus

Antiseptic and  
Prophylactic,  
Deodorizing and  
Non-Irritating.

For Medical, Surgical,  
Dental and Toilet Use.



## Schieffelin's Cocaine Discoids

A New, Safe and  
Convenient Means of  
Producing Local  
Anaesthesia.

**A**N agreeable and effective alkaline antiseptic and prophylactic for the treatment of catarrhal inflammations of the Mucous Membranes and for promoting cleanliness in catarrhal troubles, checking unpleasant discharges, and exerting a healing effect in general. It is also an agreeable mouth wash and dentifrice, a valuable addition to the toilet, and a reliable antiseptic for the dental surgeon. As a wound-dressing and a disinfectant and cleansing fluid in the treatment of unhealthy conditions of the skin and the mucous membranes in general, especially those attended with excessive secretions, BENSOLYPTUS is safe, convenient and efficient. BENSOLYPTUS may be diluted with from two to eight parts of water, as required. Internally, BENSOLYPTUS is of value as an anti-fermentative in disorders of the stomach and intestinal canal and may be used in doses of one fluid drachm diluted. Put up in 16 oz. oval bottles.



**T**HE COCAINE DISCOIDS prepared by us consist of the pure hydrochlorate of cocaine of our own manufacture, without admixture of foreign material to impair its activity as in the ordinary hypodermic tablets. The quantity of the drug in each discoid is definitely determined by weight, the amounts suitable for ordinary doses being selected, namely, one-eighth, one-fifth and one-fourth grain, and owing to their method of manufacture, not being compressed, the Discoids are readily soluble, dissolving in one drop of water. These advantages of the Discoids over all other methods of employing Cocaine insure not only safety, but convenience of application. Before or during the course of an operation, a solution of Cocaine of any desired strength can be prepared at a moment's notice, and the quantity injected is always known and not a matter of conjecture.

	Per tube of twenty.	Per tube of one hundred.
Discoids containing $\frac{1}{8}$ gr.	.14	.50
“ “ $\frac{1}{5}$ gr.	.16	.60
“ “ $\frac{1}{4}$ gr.	.18	.70

Pamphlets mailed on application.

# Wyckoff's Obtundent

FOR THE  
DENTAL  
PROFESSION.

## FORMULA :

Cocaine Hydrochlorate . . . . .	5 grains.
Solution Trinitrin (1 per cent.) . . . . .	10 minims.
Spirit Thymol Comp. . . . .	$\frac{1}{2}$ fluidounce.
Distilled Water, q. s. ad. . . . .	1 fluidounce.

The Spirit Thymol Comp. is composed of Benzo-Boric Acid, Thymol, Eucalyptol, Oil Wintergreen, Oil Peppermint, with Ext. Witch Hazel, Alcohol and Distilled Water.

## PUT UP ONLY IN ONE-OUNCE BOTTLES.

Price, . . . . .	\$0.60 per ounce, net.
" in 5-ounce lots . . . . .	.55 per ounce, net.
" in 10-ounce lots . . . . .	.50 per ounce, net.

**Terms:** Cash or P. O. Money Order must accompany each order.  
Expressage Prepaid.

## SOLE AGENTS :

**HENRY K. WAMPOLE & CO.,**

*Manufacturing Pharmacists,*

**441 Green Street, Philadelphia, Pa.**

Post Office Box 2809, Station S.

# Blair's Fountain Spittoon.

**\$40.00** Net, with chair bracket and floor piece.

A  
New  
Departure in

## Fountain Spittoons.

The bowl is porcelain covered inside and out, and will not rust, tarnish or break, and is easily kept clean.

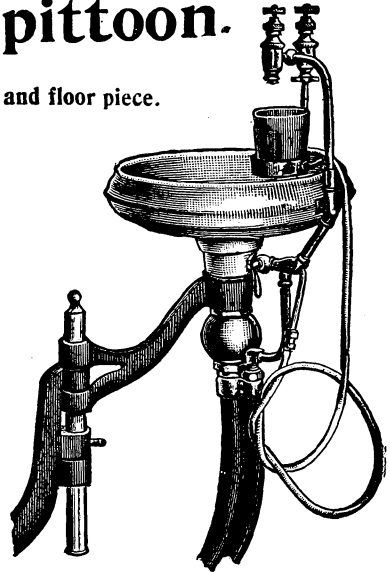
Has no center-piece to catch blood or saliva, the water coming in over the edge of a nickel-plated disk placed in the bottom of the bowl.

Has a combination gold and gas trap.

Detachable water-glass holder, water faucet and improved saliva ejector.

Best silver-covered tubing. Metal parts handsomely nicked and enameled.

For descriptive circular, address :

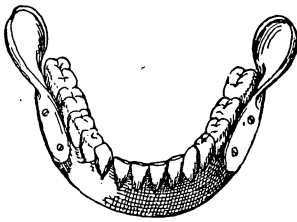


Patented.

**The Blair Fountain Spittoon Co.,**

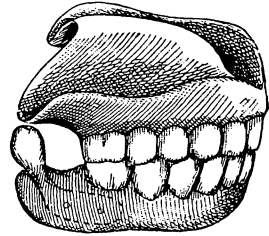
**410 West Chestnut St., Louisville, Ky.**

# DRS. JOHNSTON AND CARROLL'S



## Retainers

... FOR ...  
ARTIFICIAL  
TEETH.



*Patented Sept. 17, 1895, in United States and Foreign Countries.*

**R**ETAINERS do what their name implies, they hold a lower plate firmly and steadily in position while eating, singing, talking, public speaking, blowing a wind instrument, holding a cigar, pipe, or a much heavier object between the teeth. The muscles of the jaws and cheeks in their contraction exert a pressure on the expanded and vertically extending portions of the retainers. This pressure, which is exerted without conscious effort, is the force that holds the lower denture firmly in position on the alveolar ridge.

The most skeptical in regards to the merits of this invention will be convinced by giving it a trial. Your patient will acknowledge the comfort and benefit derived therefrom before leaving your office.

Retainers are made of Gold, Platinum and Aluminum.

### — PRICES —

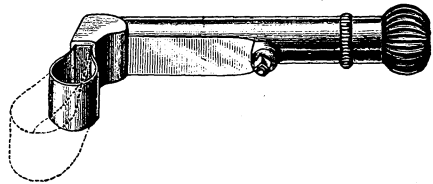
One Pair Aluminum,	- - - - -	\$ .75
Six Pairs Aluminum,	- - - - -	\$4.00

Goods sent post paid on receipt of price, with circular of instructions. Address :

**DR. H. M. CARROLL, 328 W. Commerce St., San Antonio, Texas, U. S. A.**

## THE Improved Universal Matrix Carrier

(PRICE \$4.00)



Is the only retainer and carrier combined. ✿ You will see by the cut that it is so constructed that it can be attached to any sized tooth without change of matrix. ✿ It is made to carry the thin steel ribbon band matrix. ✿ By turning cap at end of barrel, you cause matrix to close around and hug, until it conforms to shape of tooth. ✿ You do not need to have a different matrix for different teeth; one does for all. ✿ Sent to any part of the United States on receipt of Post Office Order for \$4.00. Address

**DR. J. M. STROUT, Dentist, 457 1/2 Congress St., Portland, Me.**

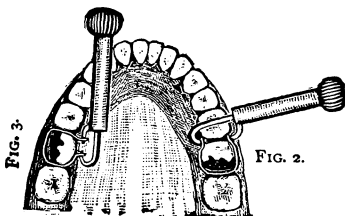


FIG. 1.

FIG. 2.

### The accompanying cuts represent THE STANDARD MATRIX RETAINER.

Pat. Aug. 27, 1895.

Fig. 1 shows retainer. The hook or traveling arm is operated by burr at end of barrel. This retainer can be used upon the buccal, labial, lingual and palatine surfaces of the teeth.

Fig. 2 shows band around first molar, drawn to place and held by retainer.

Fig. 3 shows retainer in a different position, also shows jointed matrix.



FIG. 2.

Address **J. M. STROUT, 457 1/2 Congress Street, Portland, Maine.**

# DENTAL AND IMPRESSION PLASTER

OF THE VERY BEST QUALITY  
MANUFACTURED AND FOR SALE BY

## THE NEWARK LIME & CEMENT MAN'G CO.

AT FOOT OF BRIDGE STREET

NEWARK, N. J.

PRICES GIVEN ON APPLICATION.

SAMUEL C. JONES

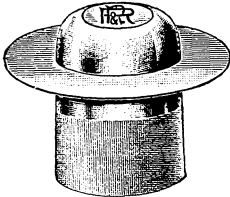
PRES. AND SEC'Y



CORRESPONDENCE SOLICITED.

CALVIN TOMKINS

VICE PRES'T



New Invention which makes  
Anæsthesia successful.

### INFILTRATION ANÆSTHETIC for the PAINLESS EX- TRACTION of teeth. Those

who are using it say it is best. I receive daily testimonials from very prominent dentists stating that Infiltration Anæsthetic is best they ever used. Why could not your verdict be the same. Try it and be convinced. A trial bottle free of charge. Statement of ingredients sent with each order. Sent postpaid 1 oz. 90c.; 2 oz. \$1.70; 8 oz. \$5.65.

Write for particulars and free sample.

Dr. A. GRUEBBEL, Mfr.,

CONCORDIA, MO.

## "The Best Pain Obtunder"

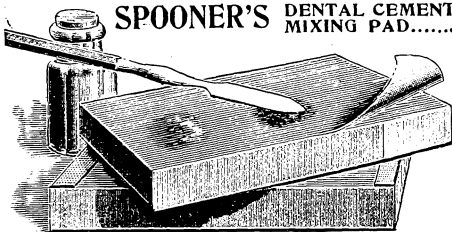
The best preparation on the market for the PAINLESS EXTRACTING OF TEETH. It is injected into the alveola or root socket, not into the flesh. Absolutely safe. You can extract thirty-two teeth at one sitting and no toxic effects or sloughing of the gums. Try an ounce; you will use no other. Money refunded if it does not do the work when used as directed. Formula on each ounce.

75c. an ounce; \$8.00 a dozen. Larger amounts special prices.

Lock Box 112 - - -

Dr. W. H. STEPHENSON.

- - - WABASH, Ind.



SPOONER'S DENTAL CEMENT  
MIXING PAD.....

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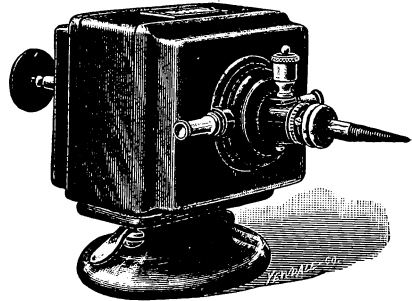
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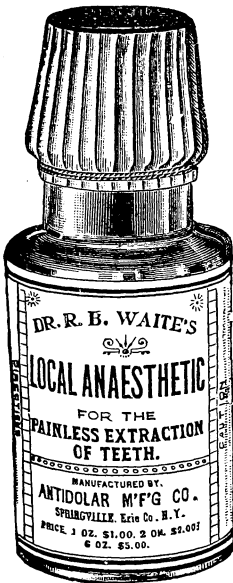
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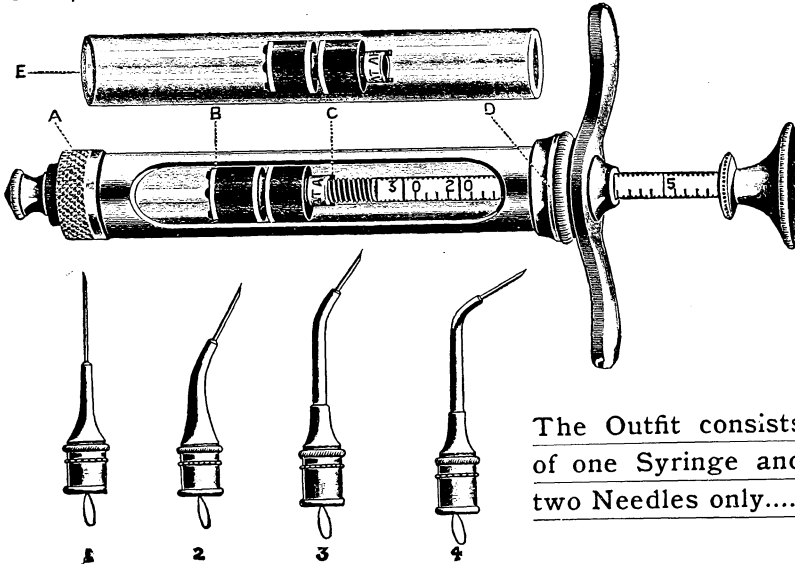
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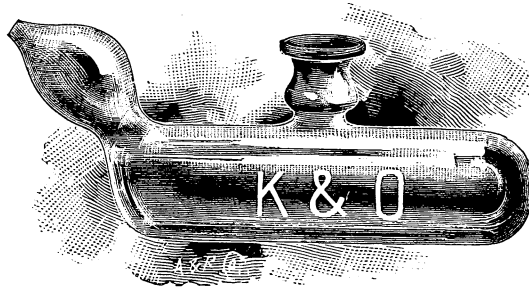
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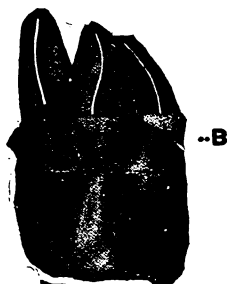
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In the pain produced by an exposed pulp, an abscessed root, pericementitis or pyorrhoea alveolaris and in neuralgia of the trigeminus, nothing is more potent than a ten grain dose of antikamnia, or preferably two five grain antikamnia tablets as indicated. If the neuralgia is of malarial origin or if the patient is of a rheumatoid diathesis, nothing will be so satisfactory and efficacious.

Many cases of odontalgia are of nervous origin; particularly is this so in persons of a neurotic type. Many pregnant women have odontalgia, whose origin is hysteria. Every dental practitioner has seen such cases. A full dose of antikamnia will give grateful relief. If some brother dentist while treating a diseased tooth leaves a broach broken off in the root canal (and this sometimes happens), and the patient comes to you for treatment, do not expect antikamnia to cure the trouble—it will relieve the pain while you are treating the condition, but it will not remove the cause.

Reflex neuroses are seen more often than otherwise in patients of a neuropathic type. These cases are frequently met with by observing dentists. Neuralgia from carious teeth affects sometimes the eye ball, supra-orbital nerve, the occipital portion of the head and in some cases the cervical vertebræ are involved; aural troubles are not infrequent. Of the latter trouble, how could it well be otherwise when there is such close connection between the teeth and the auditory apparatus by means of the fifth cranial nerve; besides this, the dental nerves are connected with the ear by other anastomoses, as well as through the Gasserian ganglion. The tensor tympani, tensor palati and tympanic plexus, receive fibers from the otic ganglion and also branches from the sympathetic.

Now is it peculiar, that changes in tissue or function of the nerve at the dental distribution should produce pain in the regions supplied by other filaments of the same nerves in their terminals? Frequently the excavation of dental caries will produce neuralgia in the ear and elsewhere. Painful ulcer of the auditory canal is sometimes dependent on caries of an upper molar. It is not claimed that antikamnia will cure this condition, but it is meant that it will relieve the pain while the tooth is being properly treated or extracted, as the condition demands.

In pulpitis without exposure, where the patient is too nervous to allow you to expose the pulp in order to apply the devitalizing dressing, pain is apt to follow. In just such cases antikamnia is the remedy and will not be found wanting. Frequently the mere filling of a cavity, the setting of a Logan crown or a bridge, will produce nervous irritation, which can be allayed admirably by this remedy.

Pain in the teeth may be produced by caries, exposed pulp, dead pulp, inflammation of the periodontal membrane, etc., there is not a more potent factor in producing trigeminal neuralgia than phagedenic pericementitis.

Dental irritation from whatever cause, reflected to another branch of the trigeminus, however remote its anatomical distribution may be, is often apt to escape the notice of both the dentist and physician. Usually, cases of supra-orbital neuralgia, pain in the auditory canal, etc., are first seen by the physician, and is not relieved by treatment because the cause is not recognized. It is, therefore, imperative in the physician, that he be on the lookout for such conditions and send his patient to the dental surgeon, who should, while removing the cause, give his patient antikamnia to banish the pain. It contracts the arteriole and thus relieves congestion.

Sometimes after extracting, the septum and process are denuded of gum tissue. When exposed to the air, great pain supervenes for several days. This condition is markedly benefited by the administration of antikamnia.

Many instances might be cited where the use of this remedy is indicated but the well-informed dentist only needs to have his attention drawn to the remedy and his knowledge will make the needed application.

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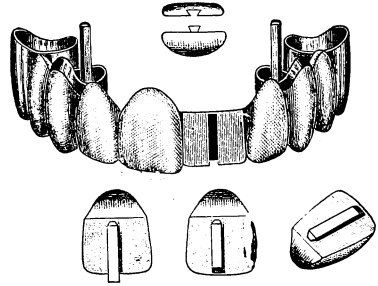
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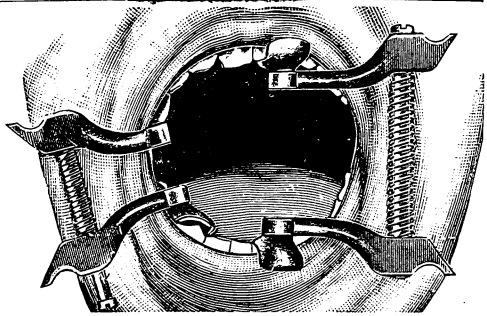
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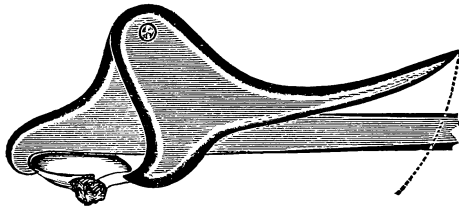
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**REGULAR SESSION** will commence September 28th and continue until April 5th, which will be immediately followed by a

**PRACTITIONERS' COURSE** which will continue for 12 weeks, (or till June 19th). A Practitioners' Course is also given during the month of September.

Women are admitted into this College on the same terms which govern the admission of men.

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Tickets for the lecture course, including dissections, histological and chemical laboratory and final examination fee ..... 80.00

A fee of three dollars must be deposited as security against breakage in chemical laboratory, which is returnable.

Board and room can be had near the college for from \$3.50 to \$6.00 per week. Rooms without board can be obtained at from \$5.00 to \$10.00 per month.

This College is recognized by the Illinois State Board of Dental Examiners.

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During the Freshman year the studies taken up are: Theoretical and Practical Chemistry, Anatomy, Physiology, Materia Medica, Dental Anatomy, Histology, Operative and Prosthetic Techniques and Operative and Prosthetic Dentistry.

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During the Junior year students complete the work in Anatomy, Physiology, Chemistry, Histology, Pathology and Bacteriology and Materia Medica. In addition to this they receive instruction in Comparative Dental Anatomy, Crown and Bridge Work, Regulating Appliances, Splints and all kinds of Plate Work, and operate in the Infirmary.

### THIRD YEAR.

During the Senior year the students listen to lectures on Oral Surgery, Therapeutics, Operative Dentistry, Dental Anatomy and Pathology, Orthodontia and attend Clinics. In addition to the lectures each student is required to operate in the Infirmary and perform practical work in the Laboratory.

Fees good until April 1st, 1898.

### FRESHMAN YEAR, 1897-98.

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General ticket.....	100.00
Histological laboratory ticket.....	5.00
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Students will be admitted to this course upon payment of the matriculation fee and twenty dollars. Those who attend only one month will be required to pay the matriculation fee and ten dollars. The amount paid during the spring and summer course will be deducted from the fees of the following winter session.

The Practitioner's Course will consist entirely of practical work. Those who wish to may take up this work during the spring and summer months.

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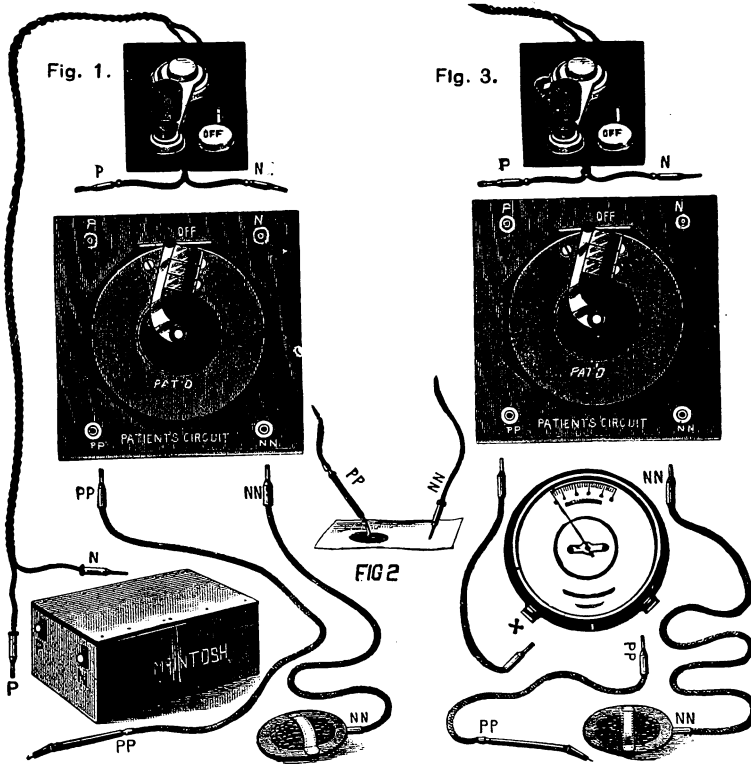
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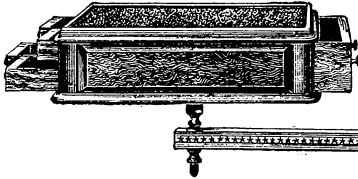
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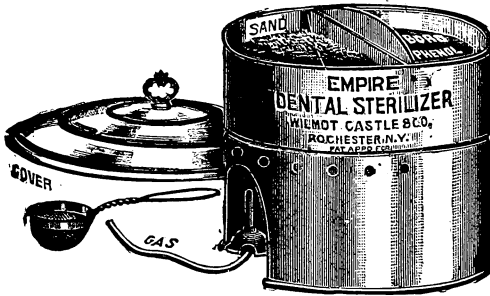
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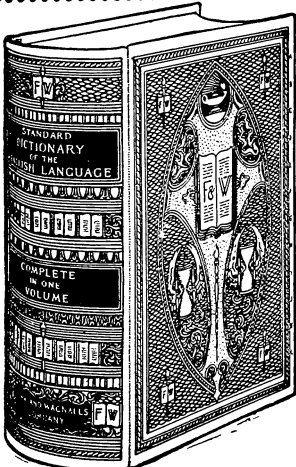
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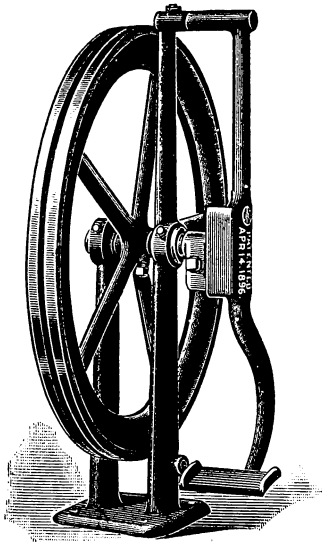


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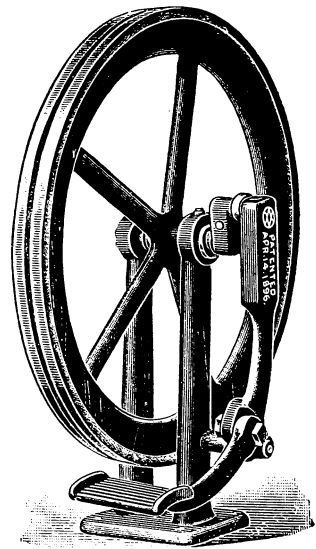
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THESE crowns are struck up solid from 22 karat gold plate, and are exact counterparts of carefully-selected, typical teeth of each class. They are of good weight, fine form, and well finished. The demand for these crowns has necessitated the making of larger sizes of molars and smaller and larger sizes of bicuspid, making the set now comprise 60 crowns instead of 42, as formerly furnished. The popularity of this change will be at once appreciated.

The comparatively small number of crowns forming a set renders it possible for dentists to keep a complete set in their offices, thus being able to take full advantage of any case that presents itself. To meet this demand, we furnish a full set—36 molars and 24 bicuspid—mounted on pegs, each crown properly numbered, and placed in a handsome leather covered case.

The diagram on the opposite page gives exact sizes of crowns at the neck. To decide on the size required, twist a piece of binding wire around the neck of the tooth, tighten by twisting the ends, compare with the diagram and select nearest size. Order *by number only*.



## Crowns Fitted to Casts Without Extra Charge.

### PRICES:

Set complete, 60 crowns, in a neat case,	-	\$125.00
Bicuspid, 22-karat gold	- - - - each,	2 00
Molars, 22 " "	- - - - "	2.50

Crowns of 24-Karat gold made to order at a cost of \$1.00 extra per crown.

MANUFACTURED BY

THE RYNEAR CO., 1267 Broadway, New York.

FOR SALE BY

# Consolidated Dental Manufacturing Co.,

NEW YORK,

BOSTON,

CHICAGO,

ATLANTA.

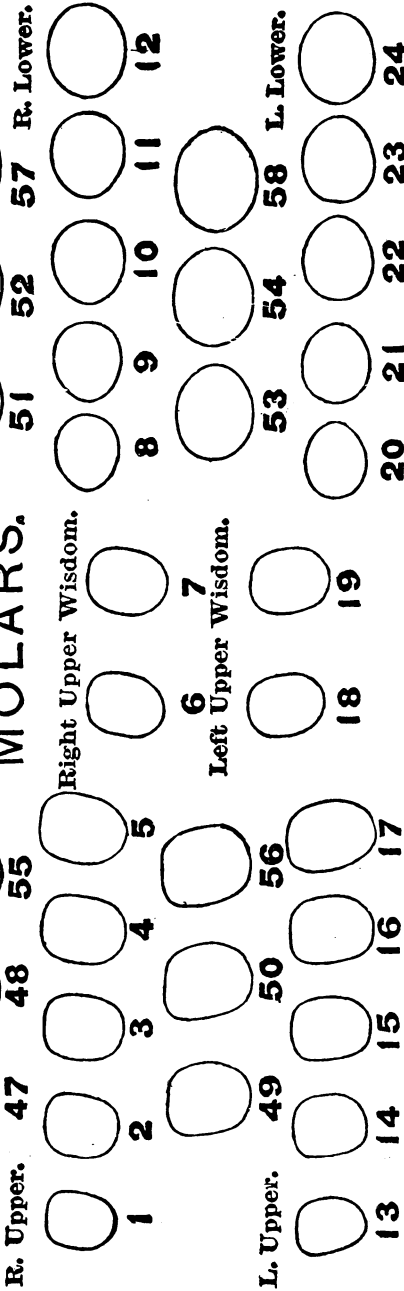
And all other reliable Dental Depots.

# THE RYNEAR CROWN.

Patented Sept. 16th, 1884.

## DIAGRAM OF SIZES

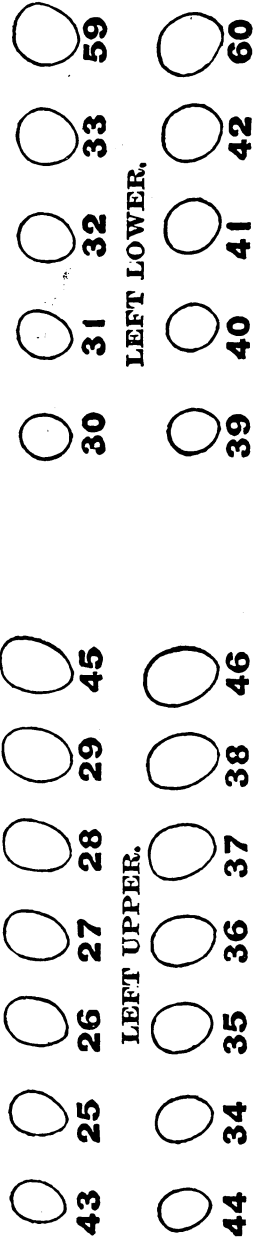
### MOLARS.



## BICUSPIDS.

RIGHT UPPER.

RIGHT LOWER.



# HIGH-LOW Gould Dental Chair.

The High-Low Gould Dental Chair is the most complete in mechanism, finish and construction, of any Dental Chair in the market, and is sold for less money.

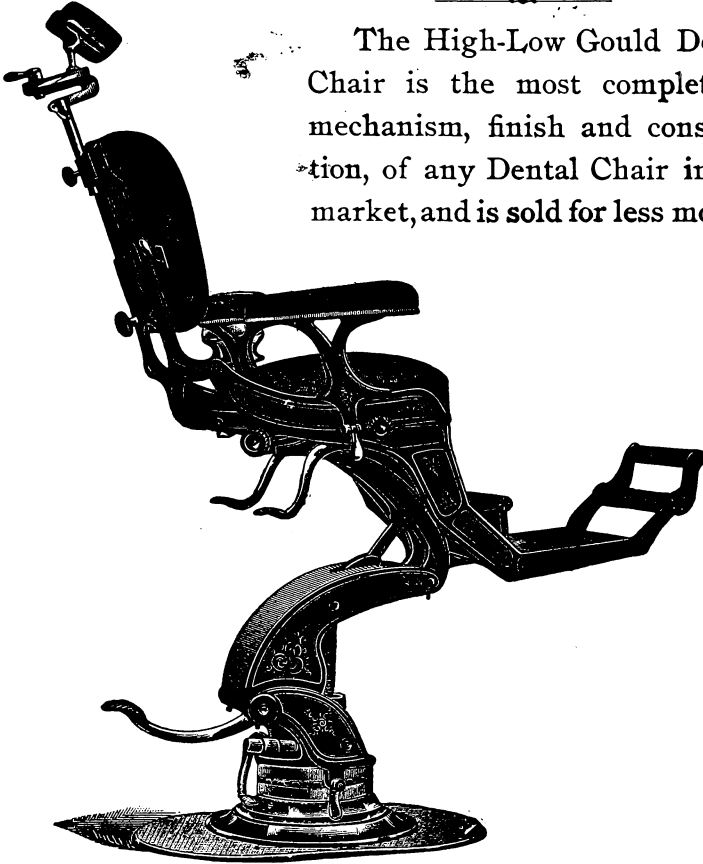


FIG. C.—Highest Position, 39 inches; Lowest Position, 19½ inches.



Prices, Packed and Delivered on Cars at Factory:

No. 54. Plain Mohair Plush (maroon or olive),	-	\$125.00
No. 52. Frieze Plush,	-	130.00
No. 50. Valure Frieze Mohair Plush,	-	135.00

## Canton Surgical and Dental Chair Co.,

SOLE MANUFACTURERS OF

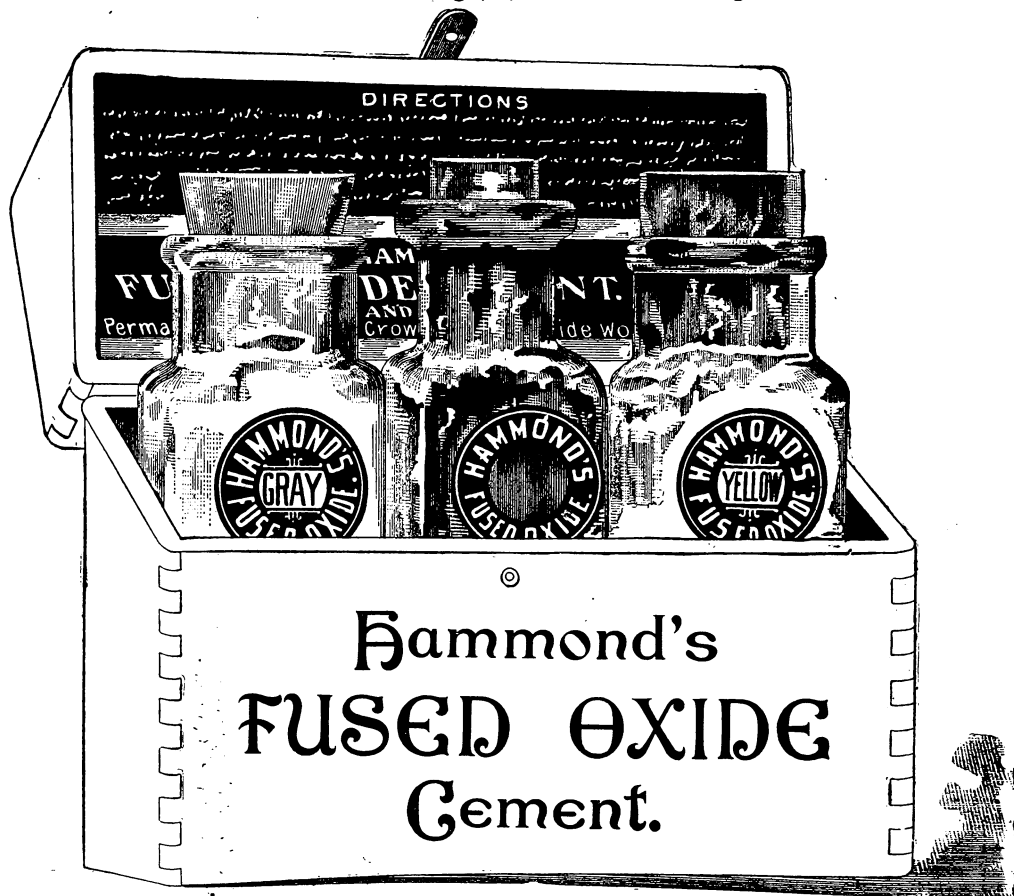
CANTON SURGICAL CHAIRS, YALE SURGICAL CHAIRS, GOULD DENTAL CHAIR,  
NEW MODEL GOULD DENTAL CHAIR, HIGH-LOW GOULD DENTAL CHAIR,  
FLETCHER FOUNTAIN SPITTOON, DENTAL ENGINES, ETC.

 Received Highest Award at World's Fair. 

Offices and Factory: New Nos. 302 to 340 East Eighth St., CANTON, OHIO, U. S. A.

# Hammond's Fused Oxide Cement

For Permanent Fillings, Crown and Bridge Work.



This cement, after years of use by the ablest dentists, has proved to be one of the hardest, most resistant and durable cements ever produced. The acid is of such a permanent character that it does not crystalize in any climate under any natural conditions. The combination of liquid and powder makes a true chemical union, thereby producing a cement of flint-like hardness and infinite permanency.

Dr. A. L. Swift, 161 West 71st street, New York City, says of it: "I have used 'Hammond's Fused Oxide Cement' for several years, and have not a failure to record against it. Recently I have seen fillings I put in the mouth from the first box purchased and found them sound and perfect as when put in."

You can make no mistake in using this cement, as its results will meet the critical expectations and most exacting requirements of the dentist.

PRICE PER PACKAGE, \$1.50. 6 PACKAGES, \$8.00. 12 PACKAGES, \$15.00.

Manufactured by

**JOHN F. HAMMOND,**

25 East 125th St.,  
NEW YORK.

What We Agree to Do, WE DO DO.

ALL OUR STRIPS ARE HIGHLY PERFUMED.

Don't take our word for it. TRY A BOX AND BE CONVINCED.

**The IDEAL POLISHING STRIP**

10000 lbs

**Sandow**

THE STRONGEST MAN IN THE WORLD

AND

THE STRONGEST AND THINNEST STRIP IN THE WORLD

PRICE, 50c. per Box.

SAND or CARBORUNDUM.

IDEAL POLISHING STRIP

SOLD BY ALL DENTAL DEPOTS.

STOCKHOUSE PATENT CONTINUOUS FLOW HOT AIR SYRINGE.

**CHIP BLOWER ANNEALING LAMP.**

**HOT AIR SYRINGE**

Beats Cataphoresis Outfit in Using Cocaine.

PRICE, \$4.00

**WELLER DENTAL SUPPLY CO.,**

550 and 552 Main St., BUFFALO, N. Y.

J. LESLIE WELLER, Proprietor.

FRANK E. WEBSTER, Manager.

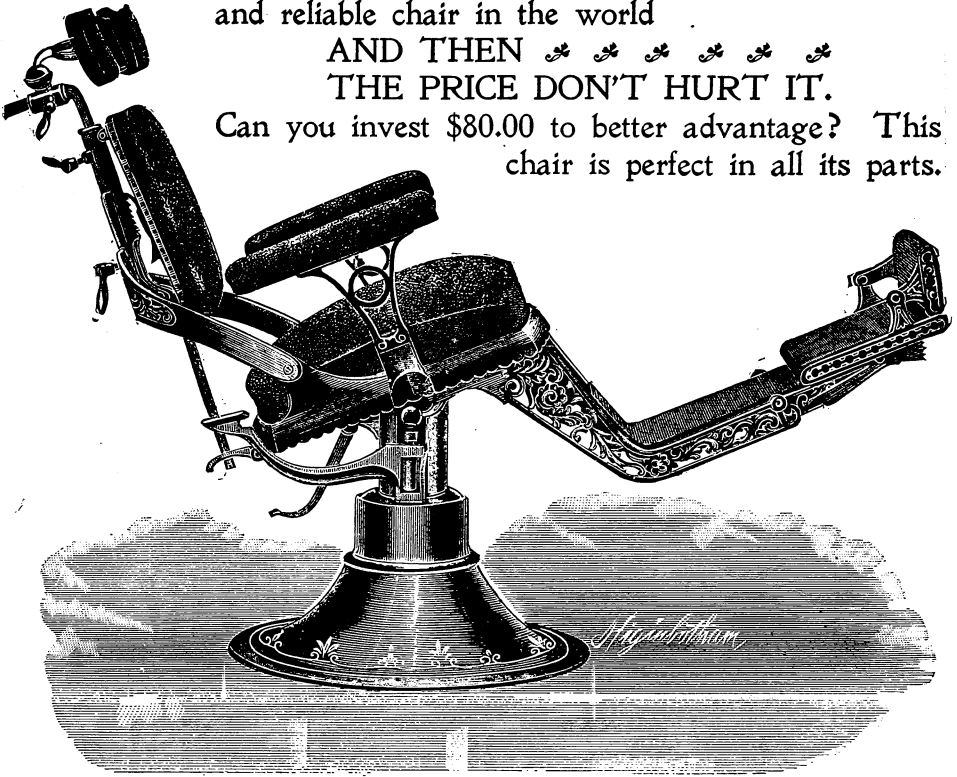
AGENTS FOR CONSOLIDATED DENTAL MFG. CO.

## ADVERTISEMENTS

Archer's High-Low, Base-Revolving, Reclining, Arm-Reversing, Combined Adult and Child's Chair, makes it the most convenient and reliable chair in the world

AND THEN \* \* \* \* \*  
THE PRICE DON'T HURT IT.

Can you invest \$80.00 to better advantage? This chair is perfect in all its parts.



THE NEW IMPROVED ARCHER PEDAL LEVER CHAIR No. 8, AT ITS LOWEST POINT AND TILTED PARTLY BACK, WITH BACK UPRIGHT AND FOOT REST EXTENDED.

Archer's Improved New Pedal Lever Chairs remodeled for 1897, and up to date. Our No. 8 Dental Pedal Lever Chair Improved with high-low Base, new Disc or Circular base (making it very firm and solid on the floor), New Iron Seat Frame, New Iron Back, Side Arms that can be taken off and reversed as occasion may require, making a wide or narrow seat to suit the patient, the best and the neatest footstool ever put into a dental chair; can be made into a long, short or medium footstool, immediately. Ball and socket Head Rest. All the latest and best improvements. *It has all the best movements that can be obtained on the highest priced chair in the market.* No. 8 chair finished in Japan, \$80.00, or in Antique Copper Plate, \$95.00, with all the latest improvements.

Our No. 9 Archer Pedal Lever Chair is acknowledged to be the handsomest and best made chair in the world. Price, \$125.00. No oil, glycerine or liquids of any kind used to obtain movements. No leaks, no breaks, no disappointments, always ready for use. Quick and satisfactory movements. You can raise and lower chair just as easily and quickly, when occupied or vacant. Write for descriptive price lists. Sweeping reductions on Dental Cabinets, in walnut. Mention this Journal.

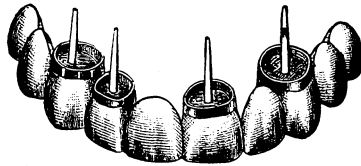
# ARCHER MANUFACTURING Co.,

## ROCHESTER, N. Y.

Write for Illustrated Price List, and Mention *Items of Interest.*

**B** **RADELL BRO'S. PLATES THAT FIT**

**O**  
**S**  
**T**  
**O**  
**N**



**Radell Brothers,**

CROWN AND BRIDGE MAKERS.

No. 2 PARK SQUARE,

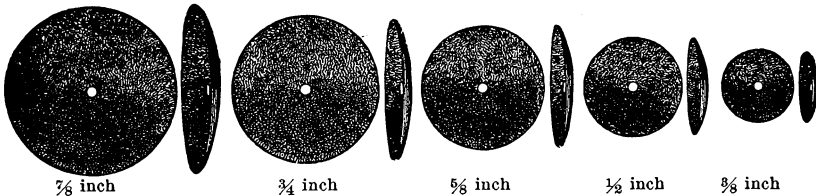
**BOSTON.**

Cavities in Porcelain Teeth twenty-five cents.

SEND FOR PRICE LIST.

**CROWNS**  
THAT  
**WEAR**  
**BRIDGES**  
THAT  
**STAND**  
THE  
**STRAIN**

## Teague's Depressed Disks.



These Disks are made to fit the convex surface of a tooth and thereby preserve the contour in dressing a filling. Cut from Sand Paper, Emery Paper, Cuttlefish Paper, Emery Cloth and Crocus Cloth. Coarse and fine grits of each, except Crocus Cloth; this is of a very fine grit for a lustrous polish. In addition to the above material, Disks of fine and coarse Garnet Paper are put in the boxes of Assorted Disks. A chart for accuracy in ordering Depressed Disks furnished on application.

Depressed Paper Disks.....	in boxes of 100, 15 cts.
" Cloth .....	" 100, 25 "
" Assorted " sizes 5/8 in., 3/4 in. ....	" 200, 30 "
" " " 1/2 in., 5/8 in., 3/4 in. ....	" 400, 55 "
" " " 3/8 in., 1/2 in., 5/8 in., 3/4 in., 7/8 in. ....	" 500, 70 "

### OTHER SPECIALTIES:

Teague's Impression Compound.....	4-lb. can, 50 cts.
" Sand Paper Strip Chuck.....	25 "
" Cavity Cap Disks.....	per 100, 25 "
" Capsicum Plasters.....	100, 40 "
" Arm-rest.....	\$1.00

**SOLD  
BY  
THE  
TRADE**

OR BY



**Dr. B. H. Teague,**  
**AIKEN, S. C.**

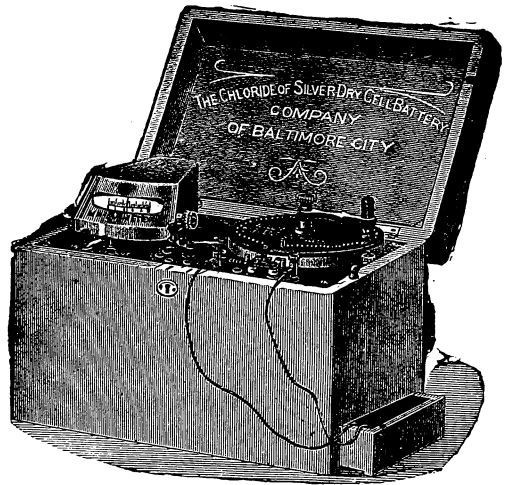


# A Jump into Prosperity!

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## Lead all Others!

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Marvelous Record of the World-Celebrated

## Chloride of Silver Dry Cell Batteries in Cataphoresis.

At one bound these perfect instruments have become the standard in their field, giving complete satisfaction where others have tried and failed. Their superiority lies in the source of current and in the medium of administration. The Chloride of Silver Cells give constant and uniform current and the Willms Current Controller is the only Rheostat that will safely administer the current gradually and without shock.

You will add **Publicity**  
**Popularity**  
**Prosperity**

to your office when you possess one of these handsome and perfect instruments.

Write for our 2d edition Treatise on Cataphoresis which will be sent free upon application.

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## The Chloride of Silver Dry Cell Battery Co.

DENTAL DEP'T, OFFICE 409 N. PACA ST., BALTIMORE, MD., U. S. A.

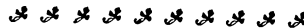
## DRESS

# Artistic Home Decorations.



Does it pay you to have your house decorated and painted by inferior workmen when you can have it done by skilled workmen—by artists—at the same price?

We can show you effects never before thought of, in original schemes of stylish, harmonious colorings—moderate Prices



No home is substantially decorated without our tapestry cloth on the wall's. See Douthitt's Manual of Art Decoration.



## Tapestry Paintings.

2000 tapestry paintings to choose from, 38 artists employed, including gold medalists of the Paris Salon.

## Decorations.

Write for color schemes, designs, estimates. Artists sent to all parts of the world to do every sort of decorating and painting. We are educating the country in color harmony. Relief Wall Paper, Stained Glass, Carpets, Furniture, Window Shades, Draperies, etc. Pupils taught decoration. Send for a \$25.00 color scheme to decorate your home:

## Art School.

Six 3-hour tapestry painting lessons, in studio, \$5.00. Complete printed instructions by mail, \$1.00. Tapestry paintings rented. Full size drawings, paints, brushes, etc., supplied. Nowhere, Paris not excepted, are such advantages offered pupils. Send \$1.00 for complete instructions in tapestry paintings and compendium of 140 studies.

## Tapestry Materials.

We manufacture tapestry materials. Superior to foreign goods and half the price. Just for a trial we will send you two yards of our 50-inch goods for \$1.50.

## Goblin Printed Burlaps.

Over 100 new styles, for wall coverings at 25 cents a yard—36 inches wide. This costing the same as wall paper at \$1.00 per roll. 240 kinds of Japanese Iida Leather Paper, at \$2.00 per roll.

## Manual of Art Decoration.

The art book of the century, 200 royal quarto pages, 50 superb full-page illustrations, 12 colored, of modern home interiors and tapestry studies. Send \$2.00 for this superb book, worth \$5.00.

## Wall Papers Given Away.

Send \$1.00 for 10 rolls of fine satin, French or Leather papers, ceilings same price. 18-inch friezes to match, 20 cents per roll. Any quantity at *pro rata* rate. State color and for what rooms.

## Goblin Art Drapery.

To match all sorts of papers, from 10 cents per yard up.

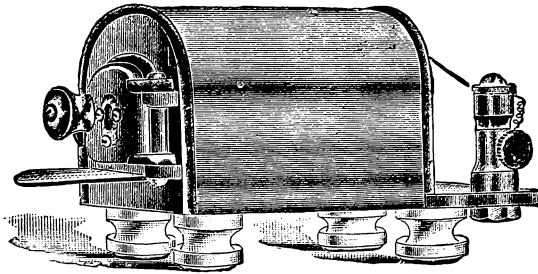
GRECIAN,	SOUDAN,
RUSSIAN,	INDIAN,
VENITIAN,	CALCUTTA,
BRAZILLIAN,	BOMBAY,
ROMAN,	DRESDEN,
ROCOCO,	DELFT,
FESTOON,	MARIE ANTOINETTE,
	COLLEGE STRIPE,

In order that we may introduce this line of New Art Goods we will send one yard each of 50 different kinds of our most choice patterns for \$7.50.

**J. F. DOUTHITT,**  
**AMERICAN TAPESTRY AND DECORATIVE CO.,**  
 286 FIFTH AVE., near 30th St., NEW YORK.

Open Evenings until 10 o'clock to discuss Decorations with Business Men.

# DOWNIE'S Electric Furnace.

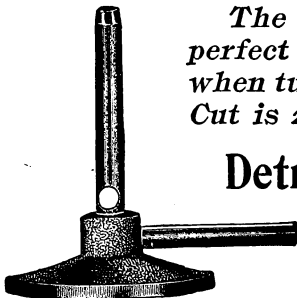


In this Furnace we have reduced the possibilities of burning out to a minimum. All other furnaces are made with fine platinum wire, imbedded in fire-clay lining. The expansion and contraction of this wire in heating and cooling, soon cracks the lining and scales it off, breaks the fine wire and ruins the furnace.

**THE DOWNIE FURNACE** has no wires imbedded, lining does not crack or give out, and, in case of necessity, can be repaired or rewired by any dentist.

- \* Bakes Downie's Body in five minutes and other \*
- \* bodies in a proportionately short time. Made for \*
- \* currents of different voltage. No Rheostat is required \*

Price,—(Muffle 1 3-4 inches, \$30.00  
Continuous Gum Size, 50.00



*The "Ideal" Bracket Bunsen Burner, burns a perfect flame, large or small. Will not burn below when turned down to the smallest possible flame. Cut is 2-3 full size.*

**PRICE, 60 CTS.**

**Detroit Dental Manufacturing Co.**  
**93 SHELBY STREET,**  
**DETROIT, MICH.**

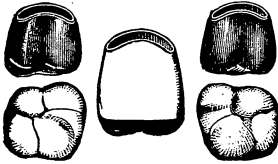


## SEAMLESS CONTOUR GOLD CROWNS WITH SOLID CUSPS.

Having manufactured Crowns and Bridge Work for a number of years, we are prepared to turn out work in the most perfect and artistic manner. The Crowns we furnish the profession with are not selected from a made-up stock on hand, such as other manufacturers have, but each crown is **made to order** for every case. We make a Crown ready to set and guarantee each one to be made of  $23\frac{1}{2}$  k. gold, and contain more gold than any other crown offered to the profession. Our aim is to do **first-class work** and to fill all orders **promptly**.



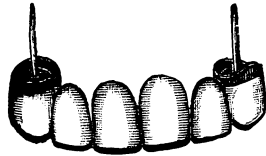
Our Centrals, Laterals and Cuspids are patterned closely after the natural teeth and are the most perfect of front tooth crowns.



Our Bicuspsids and Molars have a solid cutting edge and are easy to adjust.



## BRIDGE WORK



We herewith reproduce cuts of our work in this line, calling attention to open face and Richmond



crowns, also thickness of the cusps; all of our Bridge Work have solid cusps and cannot be worn through. 20-k. solder is used on all Bridge Work.

We do all kinds of special Crown and Bridge Work and will give estimates of work when models are sent.

We would like to have every dentist putting on Crowns and Bridge Work to give us a trial.

We have letters from leading dentists in the United States in regard to the perfect fit and adaptation to the root; also the rich color of gold and fine finish. **Sample Work** done at reasonable prices.

## WE DRILL CAVITIES IN PORCELAIN TEETH.

### PRICES OF CROWN AND BRIDGE WORK.

Molars, Centrals, Laterals and Cuspids,	- - - - -	\$2.25
Bicuspsids,	- - - - -	2.00
Bridge Work, per Tooth,	- - - - -	3.00

We make no charge for extra long Crowns.

Write for illustrated circular containing our complete price-list of other gold work. Address all correspondence to

**JAMIESON & TRENAMAN,**

514-520-522 Ellwanger & Barry Bldg.,

ROCHESTER, N. Y.

Kindly mention *Items* when ordering.

# The Clark Fountain Spittoon

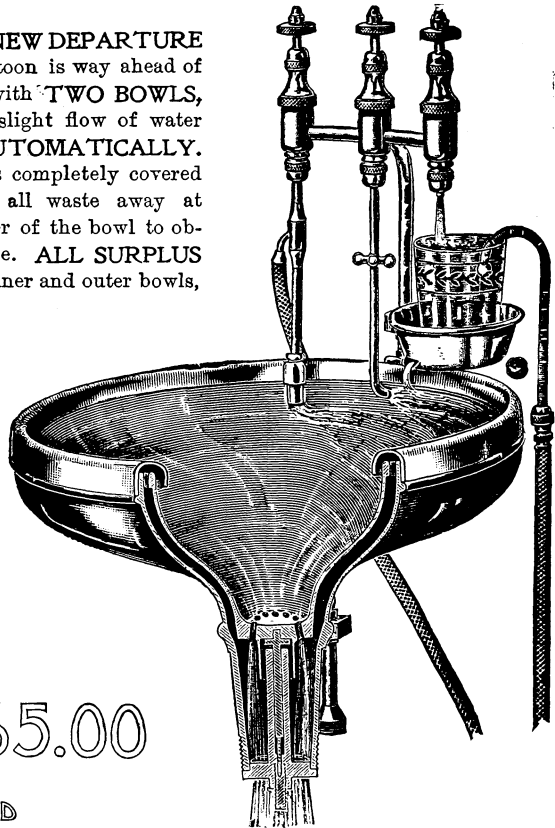
A SELF-CLEANSING SPITTOON IS  
THE ONLY ONE THAT SUITS THE  
REQUIREMENTS OF A MODERN  
DENTAL OFFICE. ❀ ❀ ❀ ❀ ❀ ❀

We ask that you carefully note the **NEW DEPARTURE** in the construction of a Fountain Spittoon is way ahead of any on the market. It is supplied with **TWO BOWLS**, the inner bowl **REVOLVING** by a slight flow of water and **CLEANSING** the bowl **AUTOMATICALLY**. Nothing strikes the inner bowl as it is completely covered by a thin sheet of water, carrying all waste away at once. There is nothing in the center of the bowl to obstruct the way. Overflow is impossible. **ALL SURPLUS WATER ESCAPING** between the inner and outer bowls, as shown in illustration.

**Complete with**  
**Nickel-Plated Glass**  
**Holder,**  
**Saliva Ejector,**  
**Chair Bracket,**  
**Spittoon Bracket,**  
**Silk Covered Tubings**  
**and Floor**  
**Connections.**

PRICE, \$65.00

**PAYMENTS \$20 DOWN AND**  
**\$5 A MONTH.**  
**DISCOUNT FOR CASH.**



STATE NAME OF YOUR CHAIR WHEN ORDERING

Send for Catalogue Showing Complete Outfit.

**A. C. Clark & Co., Man'f'rs.,**

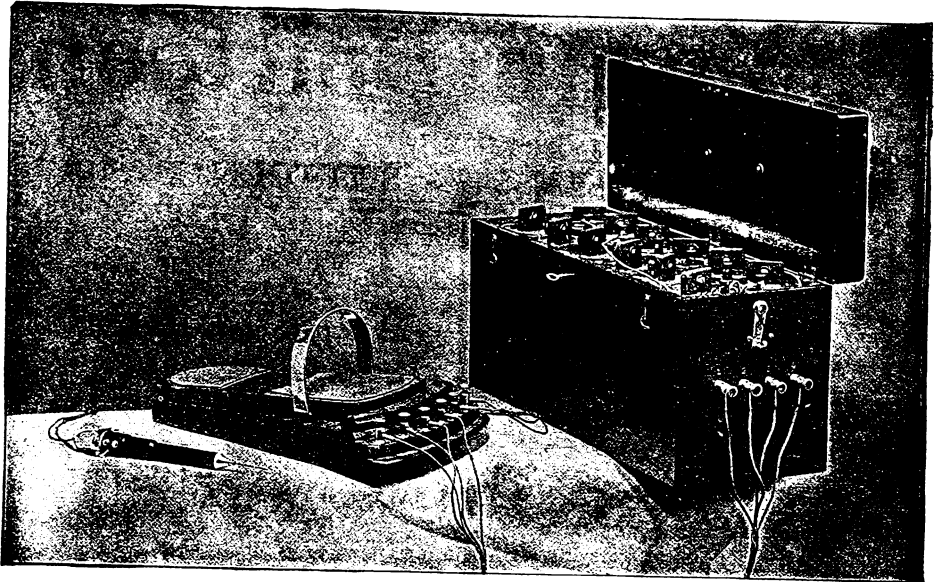
**1022 Masonic Temple,**

**CHICAGO, ILL., U. S. A.**

# The Russell Electro-Magnetic Mallet.

Simplest, Best, Cheapest,  
Most Complete and Most  
Fully Guaranteed.

Send for Descriptive Circulars and Price List. Free.



THE RUSSELL ELECTRIC MALLET CO.,  
MONROVIA, MARYLAND.

For 36 years our Guarantee has been  
"YOUR MONEY BACK IF NOT SATISFACTORY."

November

December

January

To introduce more generally our special Make of Artificial Teeth to the Dental trade, we will quote the following net cash prices for the next three months:

Single Sets, (14s.) Gum or Plain, (post paid),				
6	"	"	"	= \$1.00
12	"	"	"	= 5.00
25	"	"	"	= 10.00
	"	"	"	= 20.00

A LIBERAL DISCOUNT FOR QUANTITIES OF 50, 100 OR MORE.

## SPECIAL PREMIUM OFFER.

In order that every Dentist be induced to try our Teeth, we will send a *Sample Order* of Six Sets, gum or plain, and one-fourth ounce of our *Improved Amalgam*, on receipt of \$5.00. Or, as an inducement to future patronage, we will send Six Sets and one ounce of our *Improved Amalgam*, with one pound of Rubber, on receipt of \$7.50.

We warrant all our Teeth first-class in every way, and will exchange any not satisfactory, if returned in as good order as shipped, with postage for return package.

Order now for this advertisement may not appear again. Address

**Union Tooth Company,** OXFORD, CHENANGO  
CO., N. Y.

# GOODYEAR CROWN DENTAL GUM

## FLEXOR

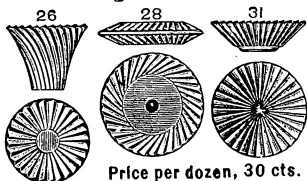
For more than twenty years sold under the trade-mark, "Bow Spring," will be sold in the future only as

## GOODYEAR CROWN FLEXOR

<b>Goodyear Crown Flexor.</b> <i>(Original "Bow Spring.")</i>	1-4 pound box at.....	\$0.50 per box
	1-2 " " " " " "	0.90 " "
	1 " " " " " "	1.75 " "
	5 " " " " " "	1.60 per pound
<b>Goodyear Crown Ethiopian.</b> <i>(Jet Black.)</i>	1-4 pound box at.....	\$0.50 per box
	1-2 " " " " " "	0.90 " "
	1 " " " " " "	1.75 " "
	5 " " " " " "	1.60 per pound
<b>Goodyear Crown Pink.</b>	1-4 pound box at.....	\$0.75 per box
	1-2 " " " " " "	1.40 " "
	1 " " " " " "	2.60 " "
	5 " " " " " "	2.50 per pound
<b>Goodyear Crown Light Red.</b> <i>(Original No. 1 Improved.)</i>	1-4 pound box at.....	\$0.55 per box
	1-2 " " " " " "	1.00 " "
	1 " " " " " "	1.90 " "
	5 " " " " " "	1.75 per pound
<b>Goodyear Crown Maroon.</b>	1-4 pound box at.....	\$0.50 per box
	1-2 " " " " " "	0.90 " "
	1 " " " " " "	1.75 " "
	5 " " " " " "	1.60 per pound

<b>Goodyear Crown Dam.</b>	Box contain'g 5 y'ds, 7 in. wide, thin..	\$1.00
	" " 5 " 7 " " medium	1.35
	" " 5 " 6 " " thin...	.85
	" " 5 " 6 " " medium	1.15

### Goodyear Crown Corrugated Soft Rubber Points.



Price per dozen, 30 cts.

Many testimonials as to the merits of the Goodyear Crown Pink and Ethiopian Gums have been received.

Every dentist should appreciate the benefit derived from being able to buy direct from the manufacturer, thus saving the large profits exacted by combinations. The quality of the goods is guaranteed.

Orders should be accompanied by postal money order.

Goods will be delivered post or express paid.

## THE INDIA RUBBER COMB CO.

Established 1851.

9, 11, 13 Mercer St., New York.

# Never

have opportunities been so great for manufacturers of specialties for Dental use to introduce articles of real merit and secure new trade, as at present. To

# Delay

means to miss the advance orders. It would be hard to estimate the total amount of the purchases now contemplated, but the best way to secure your share is to make the most attractive offer you can in an advertisement in the January "Items of Interest." Write to Geo. W. Morrison, Advertising Manager, 115 West Forty-second Street, New York, for special propositions.



# Pyrozone Solutions...

## ❧ FOR DENTAL USE. ❧

**Pyrozone 3 per cent. Solution.** A stable aqueous solution of  $H_2O_2$  conforming to the standard of the United States Pharmacopœia. Supplied only in 4 oz., chemically clean, glass-stoppered bottles.

Invaluable as a mouth-wash and as a cleansing agent for the teeth. Destroys pus, blood-stains and green-stain on the teeth.

**Pyrozone 25 per cent. Solution.** (Ethereal.) Supplied only in small glass tubes.

Invaluable for bleaching teeth and for topical applications in Pyorrhœa Alveolaris. Pyrozone 25 per cent. is also an excellent hæmostatic.

*NOTE—To open tubes of pyrozone 25 per cent. solution, wrap the tube in a cloth and nip off the top with a pair of forceps having concave beaks. Do not hold the tube in the open hand, as the warmth of the latter is sufficient to boil the ether and so cause pressure to develop.*

## The Dental Manifestations of Gout.

The researches of Dr. E. C. Kirk and Dr. C. N. Pierce have shown the co-existence of the uric acid diathesis with certain forms of suppurative gingivitis or pyorrhœa alveolaris.

## TARTARLITHINE

has been proved to be of great value in this disease. Elimination of the excess of uric acid can be most advantageously secured by administration of this new organic acid salt of lithium.

**Dr. E. C. Kirk (Philadelphia, Pa.) says in the "Lancet:"**

*The promptness of its action is in many cases astonishing, a subsidence of distressing symptoms quickly following the administration of three doses of five grains each, taken four hours apart in a half pint of water on a reasonably empty stomach. The use of Tartarlithine in the quantities named has sufficed in all cases so far treated—about twenty in number—to practically cure the disorder, temporarily, at least.*

**Tartarlithine is supplied in Bottles containing 100 Tablets.  
Literature and Sample sent Free on application.**

## McKESSON & ROBBINS, New York.

Sole Agent for the Dental Trade,  
**THE S. S. WHITE DENTAL MFG. CO.,**  
Philadelphia and New York.

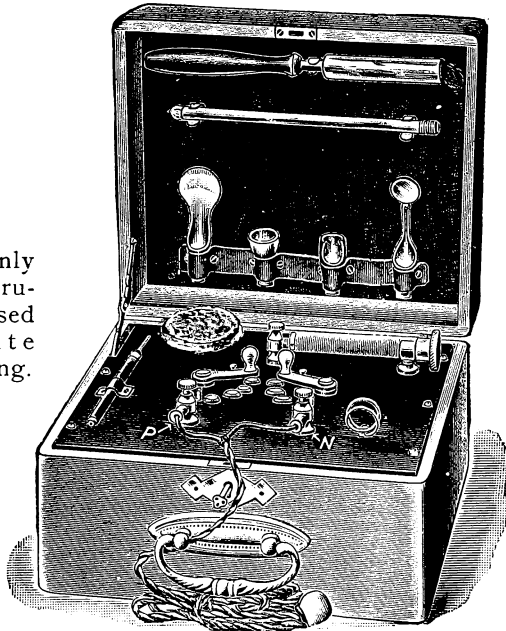
# Cataphoresis

. . The Dow Portable  
. . Cataphoric Outfit

WITH

Light and Reflector Attachments.

❁❁  
This is the only  
Cataphoric Instru-  
ment that was used  
at the White  
Mountain meeting.  
❁❁



**PERFECTION IN ELECTRICAL OSMOSIS.**

It has been demonstrated that no contact with the street current is perfect, owing to the varied changes. The only perfect current being from batteries.

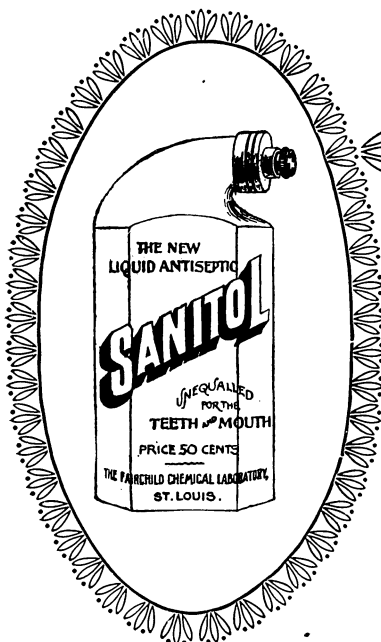
**The Dow Electric Assistant Company** have solved this problem, and places in the hands of every operator, however ignorant of electricity, an outfit that will do its work perfectly *without shock to the patient, or injury to live nerves.*

Price in leather case, \$35. Price in oak case, \$30.

Send for our illustrated catalogue with treatises on Osmosis and Clynic Reports.

**Home Office:** 218 Tremont St., Boston, Mass.

**Factory:** Braintree, Mass.



# Sanitol.

The New Liquid Antiseptic.

For the Teeth and Mouth.

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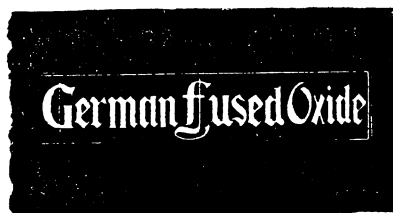
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